

Carleton University

B. McFarlane

Undergraduate Calendar
1977-78



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Carleton University

Thirty-sixth Annual
Undergraduate Calendar
for the Academic Year 1977-78

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Carleton University
Colonel By Drive
Ottawa, Canada K1S 5B6
Telephone 613-231-4321

Because this Calendar is published several months in advance of the beginning of the academic year, the University reserves the right to make whatever changes may be required, including alteration of the various fee schedules and cancellation of particular courses.

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General Information

Undergraduate Studies

The following schedule contains the dates prescribed by the University Senate for academic activities and for procedures of academic administration.

The academic year is divided into two sessions.

Winter Session

The winter session commences in September and continues until the end of the examination period in early May. The *First term* of the winter session consists of the months September to December. The *Second term* consists of the months January to May. Courses are offered during the day and the evening.

The *undergraduate Spring term* of the winter session commences in late January and runs to May.

Summer Session

The summer session commences in May and continues until the end of the examination period in August. The *Evening division* begins in May and continues until August while the *Day division* begins in July and continues until August. Courses offered in the first or second halves of these periods are designated First or Second term courses respectively.

Summer Session 1977

May 16, 17
Registration for summer evening division

May 18
Summer session evening classes begin

May 23
Statutory holiday, University closed
Classes missed will meet May 27

May 30
Last day for late registration and course changes, summer evening division

June 10
Last day for withdrawal from First term evening division half courses

June 24
Last day for application for winter session supplemental and special examinations

June 28
Last day for First term evening division classes

June 29, 30
First term evening division half-course final examinations may be scheduled as announced

July 1
Statutory holiday, University closed

July 4
Registration for summer day division
Last day for withdrawal from evening division full courses
Second term evening division begins

July 5
Summer session day classes begin

July 8
Last day for late registration and course changes, summer day division

July 13
Last day for course changes for Second term evening division half courses

July 14
Last day for withdrawal from First term day division half courses

July 22
Last day for First term day division classes

July 23
First term day division half-course final examinations may be scheduled as announced

July 25
Last day for withdrawal from both day division full courses and Second term evening division half courses
Second term day division half courses begin

July 28
Last day for course changes for Second term day division half courses

August 1
Civic holiday, University closed
Evening classes missed will meet August 5

August 5
Last day for withdrawal from Second term day division half courses

August 12
Last day for summer session classes
Winter session supplemental and special examinations end

August 15-17
Summer session examinations

August 24
Last day for receipt of summer session final grade reports by Faculty Registrars, subject to any earlier deadline

September 30

Last day for application for summer session supplemental and special examinations

October 15

Summer session supplemental and special examinations will be held

Winter Session 1977-78

April 1

Last day for routine application for admission from candidates whose documents originate outside Canada

July 1

Last day for routine application for admission from mature matriculants, from those presenting post-secondary education qualifications, and from those transferring from other universities

August 1

Last day for routine application for admission from applicants with high school qualifications

August 15

Last day for routine application for admission from Special students

September

General Faculty Board meets, date to be announced

September 1

Last day for receiving applications for degrees from potential fall graduates

September 5

Statutory holiday, University closed

September 6-9

Registration for winter session to be scheduled as announced

September 12

Classes begin in all courses

September 16

Last day for application for degree program transfers effective for First term of winter session

September 30

Last day for applications for summer session supplemental examinations

Last day for late registration

Last day for course changes for full courses and First term half courses

October 10

Statutory holiday, University closed

October 15

Summer session supplemental and special examinations end

October 21

Last day for withdrawal from First term half courses

November 12 or 13

Fall convocation for the conferring of degrees, date to be announced

December 1

Last day for application for admission to Spring term

December 9

Last day of First-term classes

Last day for handing in term assignments, subject to any earlier course deadline

December 12-22

Final examinations in half courses; mid-term examinations in Qualifying University-year and First-year courses may be scheduled as announced

January 3, 1978

Second term classes begin

January 3-6

Registration for winter session Second term half courses

January 6

Last day for receipt of First-term half course grade reports by Faculty Registrars, subject to any earlier deadline

Last day for application for degree program transfers effective for Second term of winter session

January 20

Last day for course changes and late registration for Second-term half courses

January 23-24

Registration for Spring term to be scheduled as announced

January 25

Spring term classes begin

January 27

Last day for applications for supplemental and special examinations in First-term half course finals

February 1

Last day for receiving applications for degrees from potential spring graduates

February 10

Last day for withdrawal from full courses and Second-term half courses

February 20-24

Study period (except for Spring-term classes)

February 25

Half course supplemental and special examinations end

March 3

Last day for withdrawal from Spring-term courses

March 24-26

Easter weekend, University closed

April 7

Last day of classes for winter-session courses and
Second-term half courses

April 10

Last day for handing in term assignments, subject to
any earlier course deadline

April 12-29

Final examinations may be scheduled as announced

April 21

Last day of Spring-term classes (January Admission
Program)

May 5

Last day for receipt of grade reports by Faculty
Registrars, subject to any earlier deadline

June 1

Last day for submission of grade change reports

June 3

Spring convocation for conferring of degrees

June 30

Last day for applications for supplemental and special
examinations

August 3-11

Supplemental and special examinations may be sched-
uled as announced

Summer Session 1978

Dates for the commencement of the summer session
are under review, but will fall in mid-May.

General Information

The Organization of the University

Carleton University has Faculties of Arts, Social Sciences, Engineering, Science, and Graduate Studies and Research. The School of Journalism is associated with the Faculty of Arts. The School of Commerce, the School of Public Administration and the Institute of Soviet and East European Studies are associated with the Faculty of Social Sciences. St. Patrick's College is associated with the Faculties of Arts and Social Sciences. The School of Architecture and the School of Industrial Design are associated with the Faculty of Engineering.

The Faculty of Graduate Studies and Research includes the Institute of Canadian Studies, the Norman Paterson School of International Affairs, and the School of Social Work.

The University offers programs of undergraduate study leading to bachelor's degrees in Arts, Journalism, Commerce, Music, Science, Engineering, Architecture and Industrial Design; and to a Certificate in Public Service Studies and a Certificate in Teaching English as a Second Language. The University's Faculty of Graduate Studies and Research offers programs leading to degrees in Master of Arts, Master of Journalism, Master of Science, Master of Engineering, Master of Social Work, and Doctor of Philosophy studies in certain fields. It also offers a program leading to a Graduate Diploma in Public Administration.

Purpose of the Calendar

The Undergraduate Calendar outlines requirements for admission, information concerning registration; course load, changes and withdrawals; and examinations. Regulations governing promotion and academic standing are included in the sections of the Calendar dealing with each Faculty and School. A separate calendar is published by the Faculty of Graduate Studies and Research.

How to Use the Calendar

All students should familiarize themselves with the contents of this Calendar and make themselves aware of regulations that apply to them, as prescribed by the University as a whole, by individual faculties and by departments. The following sections of the Calendar are most important in this regard:

1. *General Regulations:* Regulations applicable to students in all faculties and to Special Students (p. 23).
2. *Faculty Sections:* There are sections for each undergraduate faculty: (a) Arts (p. 51), (b) Engineering (p. 154), (c) St. Patrick's College (p. 213), (d) Science (p. 245), (e) Social Sciences (p. 309). Information on

general regulations for each faculty is provided first, and students should make themselves familiar with regulations governing the faculty (and school, institute or college where applicable) in which they are or will be registered.

3. Following the general faculty information are the departments of the University, arranged in alphabetical order within the faculty of which they are a member. Students should make themselves familiar with the regulations of every department in which they plan to take courses, including those of faculties other than the one in which they are registered.

4. Interfaculty courses are offered for students in all faculties. This section includes courses in Computing Science; Integrated Science Studies, Interdisciplinary courses, Technology, Society, Environment Studies; and a list of courses offered by the various departments which are open to students registered in other departments ("Courses for Non-Majors").

Please consult the index at the back of the book for guidance in finding detailed information and regulations.

Administration of Regulations

Students are responsible for ensuring that the courses in which they register conform to the requirements of their academic program. The regulations published in this Calendar include the main legislation governing admission and standing for undergraduate study as approved by the Senate. Advice on more specific rules or interpretations that may affect a student's registration is available from Departmental and Faculty Registrar's Offices.

Students have the right to appeal the application of a regulation, and should enquire about procedures at their Faculty Registrar's Office.

Registrarial Services

Registrarial services are available to students through the following offices:

New Applicants and Prospective Students

The Admissions Office
Room 407, Administration Building
Telephone 613-231-3730

Current Undergraduate Degree and Certificate Students

Faculty Registrar Offices are the main point of contact for current undergraduate degree and certificate students and have been established for each faculty as follows.

*Faculty of Arts and Faculty of Social Sciences
(including Journalism, Commerce, Music, and Public
Administration; not including St. Patrick's College)*
Room 312, Paterson Hall
Telephone 231-6690

*Faculty of Engineering
(including Architecture and Industrial Design)*
Room 353, Mackenzie Building
Telephone 231-4313

St. Patrick's College
Room 346, St. Patrick's College Building
Telephone 231-2745

Faculty of Science
Room 212, Herzberg Laboratories
Telephone 231-6705

Special Students and Students Enrolled in Non-Credit Courses

The Office of Continuing Education
Room 302, Administration Building
Telephone 231-6660

Classification of Students

For purposes of studying at Carleton University and for the administering of regulations governing these studies, the following student classifications are recognized.

Full-Time Undergraduate Degree Student

A student who has been formally admitted to an undergraduate degree program and who:

1. for the Faculties of Arts, Social Sciences, and Science, is taking a minimum of four full courses or the equivalent during the winter session;
2. for the Faculty of Engineering, the School of Architecture and the School of Industrial Design, is following the course load as shown for each year in those programs.

Part-Time Undergraduate Degree Student

A student who has been formally admitted to an undergraduate degree program and who:

1. for the Faculties of Arts, Social Sciences, and Science, is taking a maximum of two full courses or the equivalent during any academic session;
2. for the Faculty of Engineering, is taking a program which has the approval of the Faculty.

Special Student

A student who is registered in a degree-credit course or courses but who has not been formally admitted to a degree program.

Extension Student

A student who is registered in a "non-credit" course offered by the Extension Division of the Office of Continuing Education.

Off-Campus Courses

Each year Carleton University offers a number of undergraduate degree-credit courses at locations away from the university campus. At the present time courses are given in down-town Ottawa in the University at Noon program, in east and west-end Ottawa, and out of town in Arnprior, Carleton Place and Smiths Falls. For further information contact the Office of Continuing Education, Room 302, Administration Building, telephone 231-6660.

Senior Citizens: Tuition Fees

Persons sixty years of age and older may register for any university credit course(s) for a total fee of \$5.00.

Other Calendars

Graduate Studies and Research Calendar

Available from:
Dean of Graduate Studies and Research
Room 215, Paterson Hall
Carleton University
Ottawa, Canada K1S 5B6

Summer Session Calendar

Available from:
Office of Continuing Education
Room 302, Administration Building
Carleton University
Ottawa, Canada K1S 5B6

Extension Calendar (non-credit)

Available from:
Office of Continuing Education
Room 302, Administration Building
Carleton University
Ottawa, Canada K1S 5B6

Course Numbering System

Notes

1. Half courses are marked with the symbol *.
2. When the number of an individual course is changed from one year to the next, the former (old) number is noted, for one year only, in brackets next to the new number.

Departmental Numbering

Each course number is prefixed by the number or numbers of the Department, School or committee under whose auspices the course is offered. Academic departments are listed under the appropriate Faculty.

- 10 Interdisciplinary Humanities
- 11 Art History
- 12 Canadian Studies
- 13 Classical Civilization
- 14 Classics
- 15 Greek
- 16 Latin
- 17 Comparative Literature
- 18 English
- 19 Film Studies
- 20 French
- 22 German
- 24 History
- 26 Italian
- 28 Journalism
- 29 Linguistics
- 30 Music
- 32 Philosophy
- 34 Religion
- 36 Russian
- 38 Spanish
- 40 Interdisciplinary Social Sciences
- 41 Accounting
- 42 Management Studies
- 43 Economics
- 45 Geography
- 46 International Affairs
- 47 Political Science
- 49 Psychology
- 50 Public Administration
- 51 Law
- 52 School of Social Work
- 53 Sociology
- 54 Anthropology
- 55 Soviet and East European Studies
- 56 Sociology-Anthropology
- 59 Multidisciplinary Technology, Society, Environment
- 60 Interdisciplinary Sciences
- 61 Biology
- 63 Biochemistry
- 65 Chemistry
- 67 Geology
- 69 Mathematics (Majors)
- 70 Mathematics (Honours)

- 71 Mathematics (Education)
- 75 Physics
- 76 Architecture Division A
- 77 Architecture Division B
- 78 Architecture Division C
- 79 Architecture Division D
- 80 Architecture Division E
- 82 Civil Engineering
- 85 Industrial Design
- 88 Mechanical and Aeronautical Engineering
- 94 Systems Engineering and Computing Science
- 95 Computing Science
- 97 Electronics
- 99 Engineering Projects

St. Patrick's College

- 00 Science and ULAP
- 04 Interdisciplinary Courses
- 06 French
- 08 Sociology
- 13 Classical Civilization
- 18 English
- 24 History
- 32 Philosophy
- 34 Religion
- 38 Spanish
- 43 Economics
- 47 Political Science
- 49 Psychology
- 69 Mathematics

Course Numbering

The course numbering pattern is, in general, as follows:

001-099

Courses usually taken in Qualifying University year

100-199

Courses usually taken in First year

200-299

Courses usually taken in Second year

300-399

Courses usually taken in Third year

400-499

Courses ordinarily taken in Fourth year Engineering, Fourth and Fifth years Architecture, and Fourth year (Honours) Arts, Social Sciences and Science

500-599

Courses ordinarily taken by Graduate students

Programs of graduate study, first offered at Carleton in 1954, provide opportunities for advanced study, research and critical scholarship in a number of disciplines. Carleton's libraries, laboratories, and other research facilities enable graduate students to perform scholarly work of consistently high calibre, and help to foster a spirit of independent investigation.

The location of the University in Ottawa also enables graduate students to take advantage of the research facilities connected with many national institutions and government departments. In addition, through the program of Inter-University Co-operation in Graduate Instruction, full-time graduate students may take some approved credit courses at the University of Ottawa.

Graduate programs currently offered at Carleton are the following:

Graduate Diploma in Public Administration (D.P.A.)

Master of Arts (M.A.)

In Anthropology, Canadian Studies, Classics, Comparative Literature, Economics, English, French, Geography, German, History, International Affairs, Philosophy, Political Science, Psychology, Public Administration, Religion, Spanish, Sociology, and Soviet and East European Studies.

Master of Engineering (M.Eng.)

In Aeronautical, Civil, Electrical, Materials and Mechanical Engineering.

Master of Journalism (M.J.)

Master of Science (M.Sc.)

In Biology, Chemistry, Geology, Mathematics and Physics.

Master of Social Work (M.S.W.)

Doctor of Philosophy (Ph.D.)

In Biology, Chemistry, Economics, Engineering (Aeronautical, Civil, Electrical and Mechanical Engineering), Geology, History, Mathematics, Physics, Political Science, Psychology, and Sociology.

Research

Graduate studies and research are closely intertwined at Carleton, as in the case of the Institute of Canadian Studies, the Institute of Soviet and East European Studies, and the Paterson Centre which provides a focal point for research units in several fields.

Of a less formal nature are the many *organized research units* in the fields of architecture, emergency communications, energy, entomology, program evaluation, jurisprudence, regional linguistics, northern and native studies, renaissance studies, social welfare studies and multi-disciplinary studies in communications.

In addition, many interesting research projects are thriving which are outlined in the biennial publication *Research and Studies*, available from the Information Office, Carleton University, Ottawa, Canada K1S 5B6.

Special Students

Students interested in pursuing graduate studies at Carleton are urged to note the following University regulation: "Course work completed as a Special student is not normally acceptable for degree credit in the Faculty of Graduate Studies." Further information is available from the Graduate Studies and Research Calendar.

Graduate Studies and Research Calendar

The studies of each candidate will be directed by a department, institute, or school, and are governed by the general regulations outlined in the Graduate Studies and Research Calendar. To obtain a copy of this calendar, write to:

The Faculty of Graduate Studies and Research
Carleton University
Ottawa, Canada K1S 5B6

University Office Guide

Hours of Operation

Registrar's Office: Faculty of Arts (including School of Journalism)

Monday to Friday 8:30 a.m.-12 noon; 1-5 p.m.

Registrar's Office: Faculty of Engineering (including Architecture and Industrial Design)

Labour Day to May 31

Monday to Friday 8:45 a.m.-12 noon; 1:15-4:45 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-12 noon; 1:15-4:30 p.m.

Registrar's Office: St. Patrick's College

Labour Day to May 31

Monday to Friday 8:30 a.m.-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-4:30 p.m.

Registrar's Office: Faculty of Science

Labour Day to May 31

Monday to Friday 8:30 a.m.-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-4:30 p.m.

Registrar's Office: Faculty of Social Sciences (including Commerce and Public Administration)

Monday to Friday 8:30 a.m.-12 noon; 1-5 p.m.

Office of Admissions

Labour Day to May 31

Monday to Friday 8:30 a.m.-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-12 noon; 1-3 p.m.

Office of Continuing Education

Labour Day to May 31

Monday to Friday 9 a.m.-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-4:30 p.m.

Evening Service, Office of Continuing Education

Labour Day to May 31

Monday to Thursday 6:45-9 p.m.

June to Labour Day

Monday to Thursday 6:30-8:30 p.m.

Students registered in degree programs may receive evening counter service (general information and forms) from the Office of Continuing Education.

Business Office

Monday to Thursday 10 a.m.-3 p.m.

Friday 10 a.m.-4 p.m.

Evening Service, Business Office

Labour Day to May 31

Monday to Thursday 7-9 p.m.

June to Labour Day

Mondays and Thursdays only 6:30-8:30 p.m.

Library

Summer Evening Session

Monday to Thursday 8:30 a.m.-10 p.m. all services (10-11 p.m. study facilities only)

Friday 8:30 a.m.-5 p.m. all services

Saturday 12:30-5 p.m. all services

Sunday closed

Summer Day Session

Monday to Thursday 8:30 a.m.-10 p.m. all services (10-11 p.m. study facilities only)

Friday 8:30 a.m.-5 p.m. all services

Saturday 10 a.m.-5 p.m. all services

Sunday 1-6 p.m. study facilities only

Weekend study hours may be extended before examinations.

Winter Session

Monday to Thursday 8:30 a.m.-10 p.m. all services (10-11 p.m. study facilities only)

Friday 8:30 a.m.-6 p.m. all services

Saturday 10 a.m.-5 p.m. all services (5-10 p.m. study facilities only)

Sunday 10 a.m.-10 p.m. study facilities only; 12-6 p.m. limited services

Weekend study hours may be extended before examinations.

When classes are not in session hours are reduced
Library closes for all statutory and civic holidays except Easter Monday.

Bookstore

Labour Day to May (end of examinations)

Monday to Thursday 9 a.m.-9 p.m.

Friday 9 a.m.-4:30 p.m.

May to Labour Day

Hours will be posted at the Bookstore entrance.

St. Patrick's College: Learning Resource Centre

Hours will be posted at the entrance to the Learning Resource Centre.

Student Services*Labour Day to May 31*

Monday to Friday 9 a.m.-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-4:30 p.m.

Counselling*Labour Day to May 31*

Monday to Friday 9 a.m.-12 noon; 1-5 p.m.

June to Labour Day

Monday to Friday 8:30 a.m.-12 noon; 1-4:30 p.m.

Health Services (Unicentre)

Monday to Friday 9:30 a.m.-4:30 p.m.

Medical Clinic (Unicentre)

Monday to Friday 9:30 a.m.-4:30 p.m.

Infirmary and Medical Clinic (Glengarry House)

From September to May, 24 hours a day, seven days a week.

Office Locations

Admissions

Room 407, Administration (231-3730)

Alumni Association

Room 510, Administration (231-3833)

Athletics and Recreation

Room 201, Physical Recreation Centre (231-2646)

Awards Office

Room 202, Administration (231-3735)

Bookstore

Room 306, Southam Hall (231-6616)

Business Office

Room 301, Administration (231-3762)

Canada Manpower Centre, Carleton University

Room 508, University Centre (231-2600)

Continuing Education

Room 302, Administration (231-6660)

Counselling

Room 305, St. Patrick's College (231-4408)

Dean of Student Services

Room 501, University Centre (231-3723)

Development Office

Room 510, Administration (231-4430)

General Information Desk

Administration (231-4321)

Health Services

Level 6, University Centre (231-2755)

High School Liaison Office

Room 204, Administration (231-2738)

Infirmary

Level 1, Glengarry House (231-3844)

Information Carleton

Level 4, University Centre (231-7177)

Information Office

Room 605, Administration (231-3600)

Medical Clinics

Level 6, University Centre (231-2755)

Level 1, Glengarry House (231-3844)

Overseas Students' Advisory Service

Room 501, University Centre (231-3724)

Registrar's Office, Faculties of Arts and Social Sciences

Room 312 Paterson Hall (231-6690), General Office

Room 322 Paterson Hall (231-7407), Counselling Office

Registrar's Office, St. Patrick's College

Room 346, St. Patrick's College (231-2745)

Registrar's Office, Faculty of Engineering (including Architecture and Industrial Design)

Room 353, Mackenzie (231-4313)

Registrar's Office, Faculty of Science

Room 212, Herzberg Physics Laboratories (231-6705)

Residence Information and Food Services

Rooms 223/225, University Commons (231-3610)

Students' Association

Room 401, University Centre (231-4380)

St. Patrick's College Students' Association

Room 303, St. Patrick's College (231-4401)

Student Services

Office of the Dean of Student Services

Dean Norman D. Fenn
Room 501, University Centre
Telephone 231-3723

The Office of the Dean of Student Services can be a valuable source for a student who is seeking information pertaining to almost any aspect of student life on campus. The office exists to ascertain the needs of the student community and where needs become apparent to provide the appropriate services.

The Dean's office is involved in programming of such a nature as to facilitate interaction among the various constituents of the university. Members of the Dean's office are available in an advisory capacity which includes an Advisory Service for overseas students.

The Office has the overall administrative responsibility for the following departments:

Department of Athletics and Recreation;
Awards Office;
Counselling Services;
Health Services;
Housing and Food Services including Residence;
St. Patrick's College Student Services.

St. Patrick's College

Mr. Jim Kennelly
Co-ordinator of Student Services
Room 310, St. Patrick's College
Telephone 231-3631

At St. Patrick's College, the Co-ordinator of Student Services acts for the Dean of Student Services.

The Co-ordinator works in a liaison role between the student and the various departments of the University community. Through close contact with the Registrar, Awards Office, Athletics, Counselling and Health Services, Housing, Chaplaincy, Students' Association and the administration in general, the Co-ordinator ensures that the students' needs are met promptly. The Student Services department also works to solve the special problems of particular groups such as overseas students, part-time and mature matriculant students as well as the resident student group.

In an attempt to satisfy the tastes of all students a variety of social and cultural activities are sponsored by the Student Services department throughout the academic year.

Athletics and Recreation

Physical Recreation Centre
Telephone 231-2646

The physical recreation program has been designed to meet three general areas of interest: intercollegiate athletics, intramurals, and recreational skill instruction. Although many university students enjoy the challenge

and excitement of intercollegiate athletics, others frequently prefer a less demanding level of competition in Carleton's intramural program, while yet another segment of the university community desires physical expression almost completely devoid of all competition.

To meet these needs, skill-instruction classes are offered in squash, dance, yoga, fitness, jiu-jitsu, karate and swimming.

The intramural program includes touch football, cross-country running, basketball, broomball, volleyball, badminton, swimming, curling and hockey. A few of these activities are co-educational.

Carleton's Varsity teams for men (The Ravens) participate in basketball, football, and fencing. The University is a member of the Ontario Universities Athletic Association.

The women's Varsity teams (The Robins) are members of the Ontario Women's Intercollegiate Athletic Association and participate in basketball, volleyball, and fencing.

The University's present outdoor athletic facilities include football and soccer fields as well as hockey and skating rinks. The indoor facilities consist of a fifty metre pool and ten metre diving platform; a fitness centre with jogging track, weight training and fitness testing equipment; and a large double gymnasium with four squash courts and a combatives room. The facilities are made available to students either for recreational needs or for organized competition.

The athletic program at Carleton is governed by an Athletic Board comprised of members from the Faculty, Administration and the Students' Association.

Awards Office

Room 202, Administration Building
Telephone 231-3735

Medals are the major academic awards granted by the University to its superior graduating scholars. They have no monetary value.

The Awards Office is responsible for the administration of undergraduate scholarship and bursary programs as well as loans for graduate and undergraduate students.

Scholarships are awarded on entry to the University and to those in course on the basis of superior academic performance. Applications are not required.

Awards and prizes are awarded for excellence in particular areas of study. They may be cash awards or book prizes. No applications are required.

Bursaries are awarded to students who can show genuine evidence of financial need and who have above average academic standing. Students who are residents of the Province of Ontario or the Province of Quebec are required first to apply for Provincial assistance (Student Awards). (See next page.)

Financial Aid for Students

Administration of Awards

1. Students receiving scholarships and bursaries exceeding in total \$200 which are under the jurisdiction of the University will ordinarily be paid in two instalments, one in October and one in January. The University reserves the right to withhold the payment of the second instalment in cases where students do not meet the conditions of the award. Awards of less than \$200 will ordinarily be paid in one instalment, in October.

2. Scholarship and bursary recipients who withdraw before the completion of their year will be expected to refund their bursaries or scholarships (or a portion thereof).

Government Aid Programs

Ontario Residents

Canadian citizens or landed immigrants who are residents of Ontario may qualify for assistance from the *Ontario Student Awards Program*. This financial aid scheme is designed to supplement, rather than replace, family and/or student resources. In order to determine the additional funds required, the province objectively assesses the resources of the family and/or the student which could reasonably be used to provide for the student's educational costs. The first \$1,000 of any award then approved is in the form of Canada Student Loan. This loan is the repayable portion of the total award and is negotiated through a chartered bank or other approved lending institution and is guaranteed by the federal government. The loan is interest-free while the student is enrolled full-time and for six months thereafter. Assistance approved beyond \$1,000 is usually in the form of non-repayable bursary provided by the provincial government. The maximum loan/bursary award a student can receive in one academic year is the total amount of his allowable educational costs. The average Ontario Student Award issued through Carleton University in 1976-77 was \$1,700. Application forms and further information can be obtained by contacting the Awards Office or the Student Awards Branch of the Ministry of Colleges and Universities, Mowat Block, Queen's Park, Toronto, M7A 1C6.

Students wishing to have applications processed in time for Fall registration, must ensure that completed forms are submitted to the Awards Office for processing by *July 1*. For assistance for the full academic year, application must be made before *September 30*. Any application submitted between October 1 and January 31 is assessed for one half the normal academic year.

Part-Time Students

Students enrolled in fewer than four full courses are classified as part-time for the purposes of federal/provincial financial aid schemes. These students are advised to contact the Awards Office for information on the availability of financial aid for part-time study.

Residents of Other Provinces/Territories

Canadian citizens or landed immigrants from the territories and all other provinces except Quebec may qualify for assistance from the *Canada Student Loans Plan* through their home province. The maximum loan available per academic year is \$1,800. The loan is interest free while the student is enrolled full-time and for six months thereafter. Some provinces also make available non-repayable grant assistance along with this federal loan.

The Awards Office disburses general information on the various provincial aid schemes but application forms and details on individual programs must be obtained from the authorities in the home province. Deadline dates vary but generally speaking, it is wise to apply for financial assistance through the appropriate provincial department before July 15.

Quebec Aid

Applications from entering students for student aid assistance from the Province of Quebec should be made directly to the Awards Office. Deadline date for submission of applications is *September 30*. In order to be accepted by the Department of Education, all applications must be officially stamped by the Awards Officer.

Bursaries

Bursaries administered by Carleton University are awarded to students who have a sound academic standing and who show evidence of genuine financial need.

One application only, available in the Awards Office, is required for bursaries which are administered by Carleton.

For details of medals, scholarships, prizes, bursaries and loans see pp. 419-431.

Overseas Students' Advisory Service

Room 501, University Centre
Telephone 231-3724

The Office of the Dean of Student Services offers an advisory service for overseas students. Information concerning English and academic difficulties, job placement, financial assistance and health and immigration regulations is available through this office.

St. Patrick's College

At St. Patrick's College, the Co-ordinator of Student Services acts as adviser to overseas students.

Placement and Career Counselling: Canada Manpower Centre

Room 508, University Centre
Telephone 231-2600

The Placement and Career Counselling Service is provided by the Department of Manpower and Immigration. The purpose of the service is two-fold.

1. To provide students with a readily available access to employment opportunities. To this end the Centre maintains lists of part-time, summer and regular employment opportunities. As well, each year the Centre arranges for a number of employers, both local and national, to recruit on campus. The majority of these recruiting visits are for the purpose of interviewing graduates and prospective graduates for permanent employment. Information concerning this program is posted early in the academic year. The recruiting season commences about mid October, usually terminating in late February.

2. To provide students with information about and assistance in preparing for entry into the labour market. Individual and group counselling, covering such topics as labour market trends, specific careers, job hunting and résumé preparation, is available to students seeking or preparing for employment. Also, the Centre maintains a library of up-to-date literature of interest to these students.

All Placement and Career Counselling information may be obtained by contacting the Centre or referring to the notices posted throughout the University. The University paper and radio station are additional sources of information from the Centre.

Student Housing and Food Services

Residences

Residences are located on the campus itself close to classrooms and University activities, and are connected by tunnel to all parts of the campus. Each of the five residence buildings is provided with lounge, study and storage areas, television and music rooms. Student rooms are equipped to meet the basic needs of the students. Each pair of rooms or suite is provided with a telephone with local and long distance service.

The residence contract covers room and board, three meals a day, seven days a week. Special diets are not provided. Unlimited servings at all meals are permitted but no allowance can be made for meals which are missed.

Students registered in a course of study in the main faculties of the University or St. Patrick's College may apply for accommodation in women's residence, men's residence, or a co-educational residence which has males and females sharing the floor. Early submission of residence applications is recommended. Do *not* wait until the University acceptance has been received.

To receive your residence application indicate on the University application that residence is desired. All residence information, together with the application, will then be sent to you.

Assignment numbers will be allotted to applications received prior to midnight March 14 by a random draw and from March 15 onward will be numbered when received. *No* initial deposit is required.

Graduate Housing

Residence on campus has space allotment for graduate students. In addition there are two off-campus houses which will accommodate 22 students in single and double rooms; meals are not provided.

Off-Campus Housing

Telephone 231-3612

The Off-Campus Housing Section is set up to assist students unable to obtain or not interested in on-campus residence accommodation. Listings range from rooms to private houses, giving the rates and amenities provided. This service has been set up to aid out-of-town people, but it is in no way a rental agency. Listings (not available for distribution) are posted in a glass enclosed case in the foyer outside room 223 of the Commons building, and are available 24 hours a day, seven days a week. The University does not undertake to inspect or approve any of the facilities which are listed by the Off-Campus Housing Section.

In addition a service called "Faculty and Staff Listing" is prepared. This lists houses of staff members going on sabbatical leave for periods ranging from six months to two years. These are available on request.

Food Services

Telephone 231-6395

Students residing off campus may use the residence dining facilities, which offer food services programs with unlimited servings, by purchasing a meal plan ticket. Five plans are available:

21 meals per week (breakfast, lunch and dinner) seven days a week;

15 meals per week (breakfast, lunch and dinner) Monday through Friday;

14 meals per week (lunch and dinner) seven days a week;

10 meals per week (lunch and dinner) Monday through Friday;

5 dinners per week Monday through Friday.

The University Centre contains a dining room and two cafeterias which provide "a la carte" service for students and staff throughout the day. The Loeb Building also has a snack bar and the University Commons contains a snack bar. St. Patrick's College contains a small snack bar for provision of "a la carte" meals during the day. In addition many of the buildings are serviced by vending machines for light refreshments.

Conference Services

Telephone 231-5510

During the summer months, residences are used in a dual capacity for summer and transient students and for conference delegates. Full conference requirements (room, food services, special catering, meeting rooms, etc.) are handled by this section. Rates and details will be sent out on request.

The arrangement of special functions such as wedding receptions, banquets, parties (large and small) and special meetings come within the scope of this section."

Health Services

Health Services are provided to protect and improve the physical and mental health of the students and of the University community. Its responsibilities are to provide treatment, to consult and advise, and to ascertain the fitness of students to perform academic work. When the necessary service cannot be provided by the program, the staff will endeavour, through referral, to make available what is required. The nature of the service demands that the confidentiality of records and information be respected and maintained.

Medical Services

There are two clinics and an infirmary on campus which are staffed by physicians and nurses. The central clinic is on level 6 of the University Centre. There is also a clinic in Room 119 Glengarry House. The Infirmary is located on level 1 of Glengarry House. Psychiatrists are in attendance for those requiring psychiatric assessment or care. The services provided by these facilities are available to all students of the University. For further information telephone Main Clinic (231-2755), or Glengarry House Infirmary and Clinic (231-3844).

Counselling Services

The University Counselling Services is an educational resource centre available to members of the university community. It offers a variety of learning experiences to facilitate personal growth and adjustment. Assistance is given to foster maximum development of individual potential towards achieving the realization of personal, academic, and career goals. A qualified staff team of counselling professionals provides a wide range of services and programs. All contacts with the centre are voluntary and held strictly confidential. Appropriate referrals are made when required assistance is outside the scope of the centre's services and programs.

Counselling Service

Counselling Services include personal and emotional counselling, educational and career counselling, which may include academic program selection, scholastic achievement, etc. Both individual and group approaches

are used for the purpose of counselling and therapy. Special group programs are organized periodically around particular concerns common to a number of people.

Testing service

The testing program is designed to afford individual assessments based on the type of need for self knowledge. Relevant information generated by test results is used in the counselling process for the purpose of making plans and decisions.

Information Service

A career information library is maintained which includes materials on a variety of occupations, most Canadian university and community college calendars, a number of American university calendars, educational directories, and other career literature. In addition, information about the Carleton community and sources of assistance in the greater Ottawa community is maintained.

Skill Development Service

Through various programs and activities, learning experiences are individually designed to facilitate the development of effective learning and study skills. These opportunities are offered to improve the ability to derive maximum benefit from the academic experience.

The University Counselling Services are located in Room 305 of the St. Patrick's College building with office hours from 9 a.m. to noon and from 1 p.m. to 5 p.m. Appointments may be arranged in person or by telephoning 231-4408.

Facilities for Handicapped Students

The campus of Carleton University is one of the best equipped in Canada for accommodating physically handicapped persons. The buildings are in close proximity to each other and are connected by tunnels. All of the main buildings have elevators and are ramped for outside entrance and egress; most have washrooms equipped for the handicapped.

A guide to the University for the handicapped has been prepared by a club concerned with the problems of the handicapped. Copies are available through the office of the Dean of Student Services.

Bookstore

The University Bookstore is located in Southam Hall. The Bookstore offers a wide range of reference books and books for leisure reading as well as required and recommended books for classroom use. Stationery supplies, material for laboratory use, giftware and other student requirements are also available. A booklet outlining the various services of this facility is available

at the Bookstore. Hours of operation vary in order to provide extended service required during peak periods. Please check the schedule of hours at the Bookstore entrance.

University Centre

The University Centre offers recreational and educational services and conveniences that people may need or desire in their daily life on campus, and allows an opportunity to gather in relaxed and informal discussion outside the classroom. The Centre sponsors many events of interest to the community as a whole. It also encourages individuals and groups to take advantage of the facilities by initiating their own programs.

Services and facilities within the University Centre are: arts and crafts workshop, games area, variety store, record store, women's centre, pubs, coffee house, lounges, food services, health services, Canada Manpower Centre, travel agency, radio station (CKCU-FM), student newspaper (*The Charlatan*), information services, box office (which sells tickets to special events, National Arts Centre, O.C. Transpo, Voyageur Colonial, etc.), amateur radio club, photographic club, and the offices of the Ombudsman, the Dean of Student Services and the Students' Association. The University Centre also provides rental facilities for both on and off-campus groups.

Office of the Ombudsman

Lorne A. Butchart
Ombudsman
Room 511, University Centre
Telephone 231-6717

The Office of the Ombudsman deals with individuals' grievances, complaints, and requests for information. It acts as an office independent of any structure in the university and as such is able to assist individuals with problems from both inside and outside the university.

The Ombudsman will act as an intermediary or provide information for students as the situation demands. The office co-ordinates Legal Aid Clinics and other social services in addition to providing general assistance in negotiating bureaucracies.

The office works in close relation with all university facilities and can use the facilities as the situation demands for each case.

Carleton University Students' Association
Room 401, University Centre
Telephone 231-4380

Every student enrolled at the central campus at Carleton is a member of the Students' Association. Essentially, this is a student union existing as a lobby to outline the student point of view to the Administration and various government departments, as well as being financially responsible for the University Centre building.

The Association is a totally autonomous body financed by a levy on full and part-time students. This levy adds up to a working budget of roughly one-half million dollars in the Winter term and pays for countless diverse services, facilities and activities for the student body.

The decisions on how this money is spent are made by the 24-member Students' Council, elected annually by the student population. Representation on this body is "rep-by-pop" by faculty. Also, several seats are provided for particular interest groups including one graduate, one residence, and three St. Patrick's College Students' Association representatives acting on University Centre matters.

CUSA organizes and finances, or at least sponsors, numerous very diverse projects and services for the student population, some educational, some social, some cultural, and some just entertaining.

In recent years CUSA has organized, operated or sponsored the following services:

1. *University Centre:* The Store, games room, arts and crafts workshop, Rooster's Coffee House, Box Office, The Pub and the Main Hall;
2. *Media:* The Charlantan, CKCU-FM, 93.1 Radio Carleton, Course Guide;
3. *Programs:* concert, film, dance, lecture, activity series;
4. *Education Office:* academic and political information and activity;
5. *Ombudsman's Office:* legal aid and academic problem solving;
6. *Women's Centre;*
7. *Information Carleton:* joint service with Dean of Student Services;
8. *Record Store;*
9. *Binding and Duplicating Service;*
10. *Alternate Education programs.*

The Students' Association is working to expand these programs and to develop new ones. To do so, CUSA welcomes student input and ideas, and individuals as well as groups are encouraged to make their feelings known to the elected members.

CUSA is a member of the two national student organizations: the Association of Student Councils, and the National Union of Students, as well as the provincially oriented Ontario Federation of Students.

St. Patrick's College Student Government

Room 303, St. Patrick's College

Student government at St. Patrick's College assumes two functions: general representation and administration of student affairs through the Students' Association, and representation of student academic concerns through University Government Students (UGS). These two student representative groups are distinct and independent although a great deal of interaction and cooperation is necessary for effective student government.

Students' Association
Telephone 231-4401

The St. Patrick's College Students' Association is an incorporated body operating under a council system comprised of twelve councillors with year constituencies and three executive members which are the President and two Vice-Presidents. The Students' Association has, as its registered charity, The St. Patrick's Group Home, a normalization centre for retarded adults.

In the fall of each year, St. Pat's students conduct the Canned Food Drive, which provides halfway houses and service groups with foodstuffs. In addition to these activities, St. Pat's students work weekly with the retarded in Smiths Falls, prisoners in Burritt's Rapids and parolees in Ottawa.

The Association also sponsors a newspaper, and radio, drama, photography, ski and hockey clubs, among others.

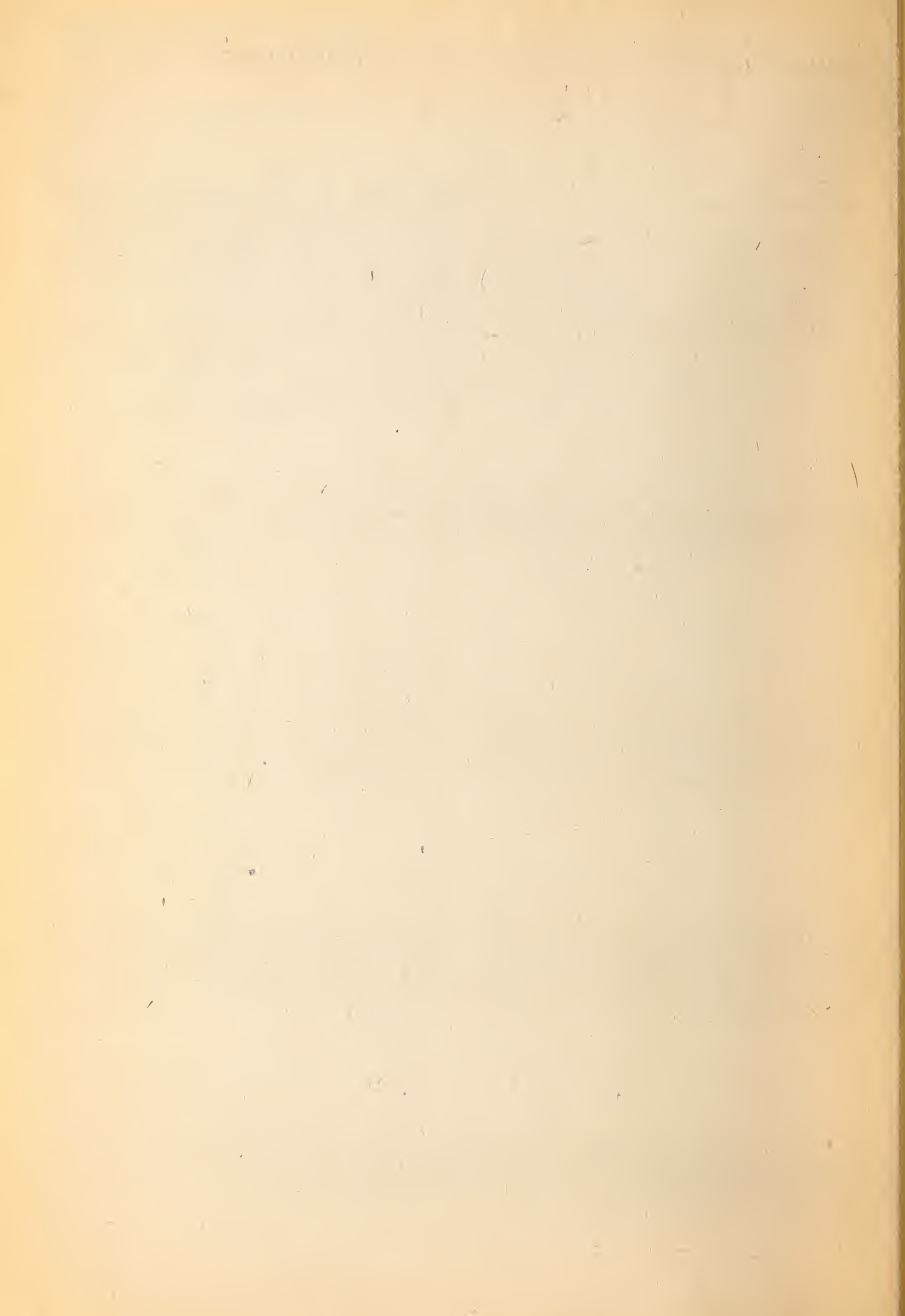
Any student encountering difficulties with the College or University management is encouraged to turn to the Students' Association for advice or direction to a body which might help.

Alumni Association

Room 510, Administration Building
Telephone 613-231-3833

The Alumni Association was founded in 1949. Its objectives are "to contribute to the development of the University, academically and otherwise, and to the effectiveness with which it fulfils its role in society; to ensure mutually beneficial relations and communications between the University and its alumni, and among the alumni members themselves; and to foster an understanding of the function of the Alumni Association among the students of the University, and the University community generally."

Alumni address records are maintained by the Carleton University Development Office, which is also responsible for all alumni fund-raising activities. Alumni communications programs are carried out through the Carleton University Information Office.



General Admission Requirements

Persons wishing to follow programs of study leading to a degree or certificate must be formally admitted to the University.

Persons wishing to register in degree-credit courses without having been formally admitted to the University may do so as Special students. See pp. 40-42.

Applicants should note that in view of limited accommodation in certain programs, holding the minimum admission requirements can only establish eligibility for selection to the University. This is particularly true for admission to the Bachelor of Architecture, Bachelor of Commerce, Bachelor of Engineering, Bachelor of Industrial Design and Bachelor of Journalism programs.

This publication contains admission requirements for the 1977-78 academic year only. Students wishing to apply for 1978-79 should request a copy of the 1978-79 Admissions bulletin which will include any revisions made since publication of this Calendar.

Applicants are reminded that the admission requirements contained herein are guidelines and, as such, are applied with an appropriate degree of flexibility. Individuals who are in any doubt about their eligibility for admission are encouraged to enquire at the Office of Admissions.

In the past few years, considerable flexibility has been introduced into the admission requirements but, at the same time, essential features have been preserved. As admission requirements are subject to continuing review, the University will most certainly make additional changes in the future, but only when convinced that these changes will be in the best interests of the student.

Guidelines have been adopted enabling the University to deal with applications from the most highly experimental schools. High school officials are invited to contact the Office of Admissions if it is felt that these admission requirements cannot accommodate certain programs being offered.

Dates of Entry

Students may be admitted to register in January, May, and July as well as in September. (See pp. 7-9 for details on the Academic Year.) It should be noted, however, that a full range of courses is only offered during the Winter session, i.e. September to May.

Levels of Entry

Students may be admitted to Qualifying University, First or Upper years depending upon academic qualification. Where a student is admitted at the Qualifying University year level, a Major degree program is normally four years in length (i.e. Qualifying, First, Second, Third) and an Honours degree program is normally five years in length (i.e. Qualifying, First, Second, Third, Fourth). Where a student is admitted at the First year level, the

degree program is reduced by one year, i.e. normally three years for a Major degree and four years for an Honours degree. Beyond First year, remaining degree requirements are determined by the total number of credits required for that particular degree program less those credits granted on transfer from previous post-secondary study.

It should be noted that students who are being considered for admission to the Qualifying University year level may, at the time of admission, receive credit for work completed at that level in the Canadian high school system. This is of particular importance if a student elects a Concurrent Studies Program or opts for Accelerated Progress (see below).

January Admissions

To accommodate the growing number of students who wish to enter university at mid-year, Carleton University has instituted a "January Admissions" program. All categories of students, including January high school graduates, Mature Matriculants, and individuals who completed high school at an earlier date, may take advantage of this opportunity.

The University has introduced a thirteen-week Spring term within the framework of the Winter session. It should be emphasized that this term ends at the same time as the regular Winter session's Second term, thus allowing students to compete on an equal basis for summer employment.

The maximum course load for students entering in January equals half of the normal course load allowable for a full academic year, i.e. two and a half courses for Arts, Social Sciences and Science.

Students may combine courses from the Spring term with one or two Summer courses, thus completing a total of four to five courses prior to September and consequently leaving them eligible to enter the Second year of the program at that time.

Although course offerings have not been finalized for the Spring term, 1978, it is anticipated that courses will be offered in the following disciplines: Economics, English, French, Geography, History, Law, Philosophy, Political Science and Psychology. In addition, courses may be offered in Mathematics and one of the experimental Sciences.

Concurrent Studies

Concurrent Studies enables local high school students to begin their university studies at the First year level while completing their Grade 13 programs. Concurrent Studies is Carleton's response to the high school credit system and recognizes the fact that many students do not proceed from Grade 13 to university in a "lock-step" fashion. The intention of this feature is to facilitate the transition from secondary to post-secondary studies, thereby extending the "continuous progress" concept which has been so well developed at the elementary and secondary levels.

Any student who has completed the Grade 12 diploma with a minimum 70% average in addition to one or more Level 5 (Grade 13) subjects may participate. At the time of admission, credit will be granted for those Level 5 courses graded 60% or better which are acceptable for the student's selected degree program. The concurrent program must then be completed in a twelve month period, at which time the requirements on admission will be adjusted to reflect the additional Level 5 work completed.

Note: Students must successfully complete six Level 5 courses in order to receive full credit for the Qualifying University year.

Accelerated Progress

Carleton will not consider Ontario Grade 12 graduates for admission to the First year, but the "Accelerated Progress" feature can achieve similar results for Qualifying University year students who perform at an above-average level. More specifically, any Qualifying University year student who, during his first two years or ten courses at the University, passes all his courses with a B- or 70% average, may have his program assessed for the purpose of reducing the number of courses required to graduate. The maximum reduction possible under this policy could result in a student obtaining a degree in three years beyond Grade 12.

For the Faculty of Science and the Faculty of Engineering, including the Schools of Architecture and Industrial Design, students who successfully meet the promotion requirements upon completion of one year of full-time studies, may apply for assessment of the remaining degree requirements under the Accelerated Progress Policy.

Because acceleration is based on a student's performance at Carleton, it is felt that this policy is more academically sound than direct entry to First year from Grade 12.

Only exceptional students should be interested in this policy of accelerated progress which is designed to enable very capable students to proceed to a degree at a rate commensurate with their ability in university work.

Qualifying University Year

This program is roughly equivalent to Ontario Grade 13 and is offered in the Bachelor of Arts, the Bachelor of Engineering and the Bachelor of Science programs. Since all other undergraduate degree programs begin at the First year level, students interested in these programs must first complete an appropriate Qualifying University year program in either Arts, Engineering or Science. (See Summary on pp. 31-34.)

Certificate Programs

In addition to offering eight undergraduate degree programs, for which the admission requirements are stated on the following pages, Carleton offers two certificate programs as follows:

Certificate in Public Service Studies

Admission Requirements

Junior Matriculation. The cases of experienced applicants without Junior Matriculation will be considered on their merits and the completion of certain subjects at Carleton may be required before admission. Candidates may be admitted with advanced standing, but must complete at least five courses for the Certificate at Carleton University.

Refer to p. 324 for program details.

Certificate in the Teaching of English as a Second Language

Admission Requirements

The certificate program is intended for persons who have already completed a first degree in another subject, or a course of study in a teacher training college. Others with a strong academic background or with experience in the teaching of English as a second language may be admitted to the program with the permission of the Linguistics Department.

Refer to p. 120 for program details.

High School Applicants

Ontario

The basic admission requirement is the completion of the Ontario Secondary School Graduation Diploma (Grade 12) with a minimum 70% average. Students who have successfully attained this level will be considered for admission to the Qualifying University year. Applicants are cautioned, however, that because of enrolment restrictions, a somewhat higher average may be required to gain admission.

To be considered for admission to the First year, which is the usual level of entry, a student must successfully complete the Ontario Secondary School Honour Graduation Diploma (Grade 13) with a minimum 60% average. Students who have partially completed Grade 13 and who are not participating in the Concurrent Studies program (see above) will be considered for possible advanced standing at the Qualifying University year level. A later assessment might also be possible under the Accelerated Progress feature (see above).

Detailed admission requirements for each undergraduate degree program can be found in chart form On pp. 31-34.

Carleton University utilizes, for admission purposes, the credit system as defined by the Ministry of Education for Ontario. In calculating averages, the weighting factor assigned to a subject will be directly proportional to the credit value of that subject.

Quebec

Students from the Province of Quebec may apply for admission to Carleton University either upon completion of the Secondary V Certificate or after completing work towards the Collegial Diploma (see Quebec CEGEPs, p. 28).

Students applying on the basis of high school studies will be considered for admission to the Qualifying University year as follows:

General Statement

The Quebec Secondary V Certificate, with a minimum 75% average and including six, two-unit, college preparatory subjects at the Secondary V level. Applicants are cautioned, however, that because of enrolment restrictions, a somewhat higher average may be required to gain admission.

Individual Degree Program Requirements

Bachelor of Arts

Secondary V work to include two of: English; a language other than English; Mathematics (Functions).

Bachelor of Engineering

Secondary V work to include: Mathematics (Functions); Chemistry; Physics.

Bachelor of Science

Secondary V work to include: Mathematics (Functions); two Natural or Life Sciences.

Students who have completed a Grade 12 program will be considered for admission to First year.

Other High School Systems

Although all high school applicants may be considered for admission to either the Qualifying University or First years, depending upon academic qualifications, individuals from foreign systems of education will be considered for admission to the Qualifying University year only if they are able to present sufficient evidence that their secondary school background is appropriate to this level of entry with respect to academic content and level of achievement.

Generally speaking, applicants must meet requirements for admission to a university in their own province or country.

The following certificates, recognized as approximately equivalent to the Ontario Secondary School Graduation Diploma (Grade 12), may be accepted to meet admission requirements to the Qualifying University year:

Quebec: The Secondary V Certificate.

Newfoundland: Grade 11 (High School Graduation).

Nova Scotia: Grade 11 (Junior Matriculation).

United States: High School Graduation (Grade 12).

United Kingdom, West Indies, East and West Africa, Hong Kong: The General Certificate of Education (or equivalent) with satisfactory standing in five subjects at the Ordinary Level (or equivalent), at one sitting.

Note: Students who achieve at a high level in their first ten courses at Carleton University may have their program assessed for a possible reduction in degree requirements (see Accelerated Progress, p. 26).

The following certificates recognized as approximately equivalent to the Ontario Secondary School Honour Graduation Diploma (Grade 13), may be accepted to meet admission requirements to the First year provided the overall minimum average is 65%.

Alberta, British Columbia, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, Saskatchewan: Grade 12 (Senior Matriculation).

United Kingdom, West Indies, East and West Africa, Hong Kong: The General Certificate of Education (or the equivalent) with satisfactory standing in five subjects at Ordinary Level and two suitable subjects at Advanced Level, the latter completed at one sitting. The International Baccalaureate.

Special Requirements for Overseas Students

Proficiency in English

Since the instructional language of the University is English, applicants must be able to understand and be understood in English, both written and oral. Applicants whose mother tongue is a language other than English must clearly exhibit this ability either by the results of the English Language Proficiency Test of the University of Michigan or the Test of English as a Foreign Language (TOEFL) given by the College Entrance Examination Board.

Financial Statement

Evidence of financial solvency will be required of all applicants before final approval of their application will be considered.

Note: Current immigration laws do not normally permit foreign students to seek employment in Canada to assist themselves in paying any part of their education expenses. In addition, the University has no scholarships or financial assistance plans available for foreign students at the Undergraduate level.

Translation of Documents

Applicants from non-English speaking countries must arrange to submit Certified English Translations of their academic documents.

Transfers from Post-Secondary Institutions

Other Universities

Students applying from other recognized universities may be admitted with advanced standing if they are eligible to continue at the institution from which they wish to transfer.

An applicant who is attending or has attended institutions of post-secondary education must present:

1. *Official Certified Transcripts* of academic record mailed directly to this University by the registrars of the institutions attended;
2. In addition, applicants who have taken only one year of study past the secondary school level may be required to submit an official transcript of high school marks mailed directly to this University by the principal of the high school concerned.

Credit may be received for courses taken at other recognized degree-granting institutions:

- (a) if courses are relevant to a student's proposed program; and
- (b) if the appropriate department recommends that such courses be credited to student's program. Each application will be evaluated individually.

Students who apply for admission to an undergraduate degree program who already possess an undergraduate degree either from Carleton or another university, are required to complete a minimum of one year's academic work at Carleton University as specified by the department in which the degree is to be taken in order to qualify for another undergraduate degree.

Ontario Colleges of Applied Arts and Technology (C.A.A.T.)

Students from Ontario Colleges of Applied Arts and Technology who present a minimum Second Class Honours standing will be considered for admission to the University and may receive advanced standing to a maximum of the equivalence of First year. Assessments regarding admission and advanced standing will be based on the following guidelines:

1. Applicants who have achieved an overall Second Class standing or better or who have Second Class standing or better in the last two semesters in a three year C.A.A.T. program will be considered for admission with advanced standing to a maximum of five courses (equivalent to one year). The advanced standing would be granted according to the appropriateness of the C.A.A.T. program, the course concentration, and the achievement in relevant courses.
2. Applicants who have achieved an overall Second Class standing or better, or who have Second Class standing or better in the last two semesters of a two-year program will be considered for admission. While such applicants will normally not receive advanced standing, exceptional applicants can receive advanced standing

on the recommendation of the appropriate academic department(s).

3. Applicants who have completed two years of a three-year program and who have achieved an overall Second Class standing or better, or who have Second Class standing or better in the last two semesters, will be considered for admission. While such applicants will normally not receive advanced standing, exceptional applicants can receive advanced standing on the recommendation of the appropriate academic department(s).

4. Applicants who have completed the first year of a three-year C.A.A.T. program with an overall First Class standing will be considered for admission to First year of an appropriate University program.

5. On a three year trial basis, graduates of a two-year or a three-year C.A.A.T. program or applicants who have completed two years of a three year C.A.A.T. program who do not meet the minimum published requirements but who are presenting *Third Class standing* may receive special consideration on an individual basis.

Other students presenting an incomplete program normally will not be considered for admission to Carleton University on the basis of that program. Such persons may enquire about possible alternatives if they are desirous of seeking admission to a Carleton University degree program at some future date.

Quebec CEGEPs

Students from Quebec CEGEPs who present a minimum Third Class Honours standing will be considered for admission to the University and may receive advanced standing to a maximum of the equivalence of First year.

Guidelines for First Year

In general, students who have successfully completed the First year of the "General" or pre-university program (or the equivalent program) with minimum Third Class Honours standing are eligible to be considered for admission to the First year.

Although specific subject requirements have been kept to a minimum, the following are considered necessary prerequisites for the degree program indicated:

Bachelor of Architecture: Mathematics, Physics.

Bachelor of Arts: None specified.

Bachelor of Commerce: Mathematics.

Bachelor of Engineering: Mathematics; Physics; Chemistry.

Bachelor of Industrial Design: Mathematics; Physics; Chemistry.

Bachelor of Journalism: Language other than English (French recommended).

Bachelor of Music: None specified.

Bachelor of Science; Mathematics; two experimental Sciences.

Students who have enrolled in the "General" program, but who have not successfully completed the First year or who have successfully completed the First year with an incorrect pattern of courses for an intended degree program here, will not normally be considered for admission.

Guidelines for Second Year

Students successfully completing two years of the "General" CEGEP program or the equivalent, with minimum Third Class Honours standing will be considered for admission and may receive advanced standing to a maximum of the equivalence of First year.

It will be the responsibility of the appropriate Carleton department, school or faculty concerned to determine the advanced standing and the remaining requirements for a particular degree program.

To ensure uniformity and equity, the acceptance/non-acceptance of grades and courses will be at the discretion of the appropriate Faculty Committee, in consultation with the appropriate department, school or faculty.

Once students have enrolled in the Second year of the CEGEP program, they must meet the published standard for that level and cannot then be considered solely on the basis of their First year's academic work.

Note: Students who make application on the basis of Second-year studies expecting advanced standing must submit detailed course descriptions upon request.

Mature and Special Admissions

Mature Matriculation

Persons who lack the normal entrance requirements as published in the University calendar but who are twenty-three years of age or over, prior to the session in which they wish to enrol, may receive consideration for admission to a degree program, either on a full-time or part-time basis.

Any individual who meets the age requirement is technically eligible to be considered for admission as a Mature Matriculant. This category is, however, designed for individuals who do not meet normal admission requirements but who would probably be successful in university studies. The successful completion of one or more courses as a Special student will normally be taken as sufficient proof of one's ability to succeed.

Mature Matriculants are normally admitted to the First year of an undergraduate degree program. Students who are seeking admission to either the Faculty of Science or the Faculty of Engineering (including the Schools of Architecture and Industrial Design), but who do not hold the necessary prerequisites, may be required to take Qualifying University year courses in addition to the regular program.

Applicants are required to submit proof of age with their application for admission.

Special students at Carleton University who meet the age requirement will normally be considered for admission as Mature Matriculants if:

- (a) they have obtained a grade of C- or better in at least one full course (or equivalent); and
- (b) are eligible to continue as Special Students.

Individuals contemplating Mature Matriculation are invited to seek advice at one of the following offices:

The Office of Admissions;
The Office of Continuing Education;
The appropriate Faculty Registrar's Office;
Any academic department appropriate to the student's interests.

Non-Canadian students are normally not considered for admission under the Mature Matriculation category.

Special Students

Special students may be admitted to degree study, upon indicating, through academic achievement at Carleton, a reasonable probability of future academic success.

Normally, in the Faculty of Arts and the Faculty of Social Sciences, a Special student will be admitted after passing at least four full courses with a C- standing or higher in at least two full courses or equivalent.

Normally, in the Faculty of Science, a Special student will be admitted after passing at least four *approved* full courses with a C- standing or higher in at least two full courses or equivalent.

Note: Students who perform at a higher level may gain admission after fewer courses, i.e. an A- average on two successive full courses or a B- average on three successive full courses.

Special students seeking admission must meet the requirements within the previous six full courses preceding formal application for admission and may not present more than two supplemental or special supplemental examinations in meeting the requirements for admission.

Special students who meet the age requirement for Mature Matriculation will normally only be considered on this basis if they have obtained a grade of C- or better in at least one full course (or equivalent) and are eligible to continue as Special students.

Admission Procedures

How to Apply

Prospective students, when requesting an application directly from the University should provide a complete outline of their academic background.

All applicants must apply through the Ontario Universities' Application Centre as follows:

1. Current Ontario Grade 12 and Grade 13 students should obtain a preprinted application form from their high school and arrange to have it submitted to the Application Centre.

2. Other applicants should obtain a common application form from the Office of Admissions, Carleton University, and submit this completed form to the Application Centre.

Applicants who have previously registered at Carleton are excepted from the foregoing procedures. These students should request a Carleton application form from the Office of Admissions and submit the completed form directly to that office.

Application Deadlines

The following are application dates for the 1977 admission year:

March 1: Candidates applying for Early Admission.

April 1: Candidates whose documents originate outside Canada.

July 1: Applicants for transfer from other universities and colleges.

July 1: Candidates applying as Mature Matriculants.

August 1; High school applicants.

August 15: Candidates applying for admission solely on the basis of work completed as Special students.

December 15: Candidates applying for either the Second term or the Spring term of the 1977-78 Winter session.

Early Admission

Offers of Early Admission will be based on the previous year final and current year interim marks.

For Ontario high school applicants, offers will not be released before June 17. The onus is on the student who does not receive an offer of early admission to supply official final marks to the Office of Admissions. Out-of-province applicants will receive an offer of admission as soon as interim marks are received by the University and the assessment completed.

Carleton reserves the right to withdraw offers of admission for failure to complete the school year satisfactorily. In addition, applicants are advised that although they may receive an offer of admission based on interim marks, final marks, when they are received, will become part of the University's admission record.

Summary of Undergraduate Degree Programs

Architecture

Degree

B. Arch.

Length of Course from Junior Matriculation

6 years

Length of Course from Senior Matriculation

5 years

Admission Requirements, Qualifying University Year

As there is no Qualifying University year in Architecture, students must complete this level of study in high school or by registering in either Qualifying University year Science or Engineering in an appropriate course pattern. Hence, the admission requirements at this level are those for Qualifying University year Science or for Qualifying University year Engineering as stated elsewhere in this chart.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 60% average and including Functions, Calculus and Physics; or the successful completion of Qualifying University year with an appropriate course pattern.

Admission requirements are for the 1977-78 year only, and are based on the Ontario High School system. Holding the minimum admission requirement only establishes eligibility for selection.

Arts

Degrees

B.A.

B.A. (Honours)

Length of Course from Junior Matriculation

4 years

5 years for Honours

Length of Course from Senior Matriculation

3 years

4 years for Honours

Admission Requirements, Qualifying University Year

The Ontario Secondary School Graduation Diploma. A 70% average must be presented on a minimum of ten Advanced or Enriched Phase credits at levels 3 and 4, including two of English, a language other than English and Mathematics, at Level 4.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 60% average; or the successful completion of Qualifying University year Arts.

For Honours: 65% on the Honour Graduation Diploma, or the equivalent.

For a Major in Mathematics, Functions and Calculus, or the equivalent (Mathematics 69.006* and 69.007*) must be included; for a Major in Biology or Economics it is recommended that they be included. Students intending to major in Biology should, in addition, present Chemistry.

Students intending to Major in Canadian Studies should present French.

Commerce

Degree

B.Com. (Honours)

Length of Course from Junior Matriculation

5 years

Length of Course from Senior Matriculation

4 years

Admission Requirements, Qualifying University Year

As there is no Qualifying University year in Commerce, students must complete this level of study either in high school or by registering in Qualifying University year Arts in an appropriate course pattern. Hence, the admission requirements at this level are those for Qualifying University year Arts as stated elsewhere in this chart.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 65% average, including Functions and Calculus; or the successful completion of Qualifying University year, with an appropriate course pattern.

Engineering

Degree

B.Eng.

Length of Course from Junior Matriculation

5 years

Length of Course from Senior Matriculation

4 years

Admission Requirements, Qualifying University Year

The Ontario Secondary School Graduation Diploma. A 70% average must be presented on a minimum of ten Advanced or Enriched Phase credits at Levels 3 and 4, including an appropriate preparation in Chemistry, Physics and Level 4 Mathematics.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma with a minimum 60% average and including Functions, Calculus, Chemistry and Physics, or the successful completion of Qualifying University year with an appropriate course pattern. A student unable to meet the specific course requirements but otherwise admissible to Carleton University may be admitted to the Faculty of Engineering, but will be required to satisfy the outstanding requirements at the Qualifying University year level.

Industrial Design

Degree

B.I.D.

Length of Course from Junior Matriculation

5 years

Length of Course from Senior Matriculation

4 years

Admission Requirements, Qualifying University Year

As there is no Qualifying University year in Industrial Design, students must complete this level of study in high school or by registering in either Qualifying University year Science or Engineering in an appropriate course pattern. Hence, the admission requirements at this level are those for Qualifying University year Science or for Qualifying University year Engineering as stated elsewhere in this chart.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma with a minimum 60% average and including Functions, Calculus, Chemistry and Physics or the successful completion of Qualifying University year with an appropriate course pattern.

Journalism

Degree

B.J. (Honours)

Length of Course from Junior Matriculation

5 years

Length of Course from Senior Matriculation

4 years

Admission Requirements, Qualifying University Year

As there is no Qualifying University year in Journalism, students must complete this level of study either in high school or by registering in Qualifying University year Arts in an appropriate course pattern. Hence, the admission requirements at this level are those for Qualifying University year Arts as stated elsewhere in this chart.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 65% average, including a language other than English (French is recommended); or the successful completion of Qualifying University year with an appropriate course pattern.

Music

Degree

B. Mus. (Honours)

Length of Course from Junior Matriculation

5 years

Length of Course from Senior Matriculation

4 years

Admission Requirements, Qualifying University Year

As there is no Qualifying University year in Music, students must complete this level of study either in high school or by registering in Qualifying University year Arts. Hence, the admission requirements at this level are those for Qualifying University year Arts as stated elsewhere in this chart.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 65% average; or the successful completion of Qualifying University year.

Science

Degrees

B.Sc.

B.Sc. (Honours)

Length of Course from Junior Matriculation

4 years

5 years for Honours

Length of Course from Senior Matriculation

3 years

4 years for Honours

Admission Requirements, Qualifying University Year

The Ontario Secondary School Graduation Diploma. A 70% average must be presented on a minimum of ten Advanced or Enriched Phase credits at Levels 3 and 4, including an appropriate preparation in Chemistry, Physics, and Level 4 Mathematics.

Admission Requirements, First Year

The Ontario Secondary School Honour Graduation Diploma, or the equivalent, with a minimum 60% average, and including Functions, Calculus and two Sciences; or the successful completion of Qualifying University year with an appropriate course pattern.

For Honours: 65% on the Honour Graduation Diploma, or the equivalent.

Requirements

All students attending the University are required to register in their courses with the Registrar's Office of the appropriate faculty at the time designated for the session, and to inform this office in writing of any changes in registration.

Students who do not register at times designated for their session will be charged a late registration fee. (See p. 44.)

A student's registration shall not be considered to be complete until arrangements have been made for the discharge of all financial responsibilities to the University in accordance with the University policies.

No student will be permitted to register until all outstanding accounts due to the University have been paid. (See Delinquent Accounts, p. 46.)

Health Service Requirements:

See p. 47.

Course Selection

Students proceeding to a degree or certificate must select their courses according to the requirements set by their faculty or school, and Major department.

Students planning to undertake professional training beyond their undergraduate studies should ensure that their programs meet the requirements of admission to their intended school or faculty.

Cross-Referenced Courses

Some courses appear in the calendar more than once. These cross-referenced courses may be taken in any of the departments under which the course is listed. Students are advised, however, to consult with their Major department as to the appropriate designation, assigned to the course, for their program of study.

The Departmental designation may not be changed after the last date for withdrawal in any term or session.

Challenge for Credit

Challenge for Credit is a new Carleton University policy that enables students to gain undergraduate academic credit for their own learning and experience outside the university.

Simply stated, Challenge for Credit gives the student the opportunity to be examined on, and receive credit for, a recognized Carleton course without meeting the normal requirements of registration, attendance, and instruction. The student first challenges the academic department with evidence that he or she has adequate experience and learning relevant to the course in

question. If the department is satisfied with this evidence it accepts the challenge, and sets an appropriate examination. If the student is successful in the examination, the course is credited to his or her academic record.

A student wishing to challenge a course for credit should enquire at his or her Faculty Registrar's Office.

Auditing Courses

A student may, with the instructor's consent, register to audit a course (i.e. attend without receiving credit), in addition to those courses being taken for credit. This course will be counted as part of the total course load.

Full-time students may register to audit a course without an additional fee; all others must pay the regular course fee.

Students who enrol to audit must so indicate on their registration form or course-change form. The last date for change from audit to credit or from credit to audit will be the last date for course changes.

Audited courses will receive no academic credit.

Course Changes

Changes of course or changes of section within a course must be applied for at the appropriate Faculty Registrar's Office. Changes must be made by the dates designated in the Calendar under the Academic Year and must be approved by the department in which the course is offered and by the Major department. Changes of course include changes of status from credit to audit or audit to credit. (See Fees pp. 44-46.)

Program Changes

Students wishing to change faculty or school, or change Majors, or change between Major and Honours, must apply to make such changes. Applications should be made at the Registrar's Office of the faculty in which the student is registered, after consultation with the faculty, school or departments concerned.

Changes in Major may be effected at any time of the year.

Students wishing to change from a Major to an Honours program should submit an application on or before October 1.

The deadlines for application for degree program changes are:

Winter Session

1. First term: Fourteen days prior to the last date for late registration.
2. Second term: On or before the Friday of the first week of lectures.

Summer Session

On or before the first day of Evening division classes.

Withdrawal

Students wishing to withdraw from a course or from the University, must apply to their Faculty Registrar's Office on the designated form, or by letter. The official withdrawal date will be the day on which application is received in the Faculty Registrar's Office. Students withdrawing from the University must return their identity card, any refund of fees being calculated from the date of its receipt. (See Fees, Withdrawal and Refund, p. 45.)

A student who withdraws from a course or from the University after the withdrawal dates shown in the Calendar for the Academic Year (see pp. 7-9), will be shown as absent from the final examinations, will not be granted supplemental privileges, refund of fees, or reinstatement in that course. Subsequent registration is permitted at full course fee.

Withdrawals may affect promotion status as prescribed by faculty regulations. Students should consult their Faculty Registrar's Office for guidance.

A student who withdraws from a course will retain no academic credit for any part of that course.

Proficiency in English

(Regulations supplementary to Admission Requirements)

All new students registered in degree programs who are non-native speakers of English will be required to write a placement test in English. Individuals who achieve an inadequate score on the test will be advised to pursue a program of English Language instruction, which will be available at the university. Both testing and instruction will be administered by the Linguistics Department.

Students are advised that this placement test in English is for diagnostic purposes only and will not form part of the academic record. It is also emphasized that, while the test itself is compulsory, the subsequent instruction is optional.

University of Ottawa-Carleton Visiting Undergraduate Students

A full-time undergraduate student in Second or higher year may, with departmental permission, take the equivalent of one course credit per Winter session at the University of Ottawa without additional fee. Interested students should enquire at their Faculty Registrar's Office. This exchange agreement is not in effect for the Summer session.

General

To gain standing in a course, a student must meet the course requirements for attendance, term work, and the writing of examinations.

Instructors will inform their class early in the session of the relation of attendance to course grades, and whether attendance records will be kept.

The Senate may at any time require a student to withdraw from the University if his conduct, attendance, work, or progress is deemed unsatisfactory.

In the Faculties of Arts, Social Sciences and Science it is the responsibility of the Major department; In Engineering, Architecture and Industrial Design, it is the responsibility of the Faculty or School to ensure that a student progresses in an orderly manner, according to faculty, school and departmental regulations.

Standing in Courses

Standing in courses will be determined by departments.

Standing in courses will be shown by alphabetical grades. The system of grades used, with the corresponding grade points, is as follows:

| | | | |
|------------|-----------|------------|----------|
| A + | 12 | B + | 9 |
| A | 11 | B | 8 |
| A - | 10 | B - | 7 |
| C + | 6 | D + | 3 |
| C | 5 | D | 2 |
| C - | 4 | D - | 1 |

The following percentage equivalents are published solely to assist other institutions in interpreting letter grades. Students are advised that these equivalents have no internal application:

| | | | |
|------------|---------------|------------|--------------|
| A + | 90-100 | B + | 77-79 |
| A | 85-89 | B | 73-76 |
| A - | 80-84 | B - | 70-72 |
| C + | 67-69 | D + | 57-59 |
| C | 63-66 | D | 53-56 |
| C - | 60-62 | D - | 50-52 |

Notations * to represent special circumstances are as follows:

Aeg

Pass standing granted although absent from final examinations. Aegrotat standing is granted only by the appropriate faculty committee, after consultation with the instructor, in response to a student's application. (See Special Final Examinations, p. 39.)

Pass

Pass standing in a supplemental examination.

F

Failure. No academic credit.

FNS

Failure, but with supplemental privileges withdrawn because of incomplete term work or an unacceptably low mark in the final examination. No academic credit.

Abs

Absent from final examination or withdrawal after deadline. No supplemental privileges. No academic credit. Abs is normally equated to failure.

Wdn

Withdrawn in good standing. No academic credit.

Def

Students who are absent from final examinations or who are unable to complete their course work for medical or compassionate reasons may apply to their appropriate faculty committee for deferred examination privileges.

IP

In progress.

Ch

Challenge for Credit.

Faculty modifications and additions to the foregoing are given under separate faculty listings.

*Note: These notations are not necessarily applicable to graduate students. See Calendar for Graduate Studies and Research.

Promotion

The conditions under which a full-time or part-time undergraduate student may be promoted are governed by faculty regulations and are shown in the Calendar entries for the various faculties and schools.

Probation

The conditions under which students may incur or be relieved of probationary status are shown in the Calendar entries for faculties and schools.

Graduation

Undergraduate students are required to meet the graduation standards laid down by their faculty or school.

Students expecting to graduate in the spring must apply for graduation at their Faculty Registrar's Office by February 1, and those expecting to graduate in the fall, by September 1.

Mid-Term Examinations

Mid-term examinations are held in Qualifying University and First year full courses at the discretion of each faculty or school. As required by instructors, mid-term examinations may also be held in senior courses. Scheduled dates are as shown in the Calendar for the Academic Year. (See pp. 7-9.) Mid-year examinations for classes held at night may be scheduled during the day and vice versa.

Final Examinations

Final examinations for each session are scheduled at the times shown in the Calendar for the Academic Year. (See pp 7-9.)

Final examinations for classes held at night may be scheduled during the day and vice versa.

A student who is absent from a final examination without an acceptable reason will not be granted supplemental privileges.

Special Final Examinations

Students who are unable to write a final examination because of illness or other circumstances beyond their control, or whose performance on the examination has been impaired by such circumstances, may, on application, be granted permission to write a special final examination. Such applications must:

1. be made in writing to the appropriate Faculty Registrar's Office not later than one week after the date of the examination; and
2. be fully supported in the cases of illness by a medical certificate or by appropriate documents in other cases.

Aegrotat standing will be considered for applicants for special final examinations, but will be granted only in exceptional circumstances and if term work has been of high quality.

Special final examinations (deferred final examinations) are written at the time of the supplementals for the session concerned.

Standing in special final examinations is shown by alphabetical grades. A student granted aegrotat standing may apply for permission to write a special final examination, but may write only at the next supplemental examination period.

Supplemental Examinations

not subject

Supplemental privileges may be granted in courses where the final grade is *F* and under conditions defined by the faculties or schools.

A student may not write a supplemental examination in a course graded *FNS* or *Abs*.

If a supplemental examination is failed, the student must repeat the course before writing another examination in it.

Application to write supplemental examinations must be made at the appropriate Faculty Registrar's Office by the designated date. (See Examination Fees p. 45.)

Supplemental examinations must be written at the next supplemental examination period.

Students may apply to write supplemental examinations outside Ottawa.

Special Supplemental Examinations

Examinations written to raise a grade in courses already passed are called special supplemental examinations. (See Examination Fees p. 45.)

Special supplemental examinations are graded by the alphabetical scale, and the grade obtained supersedes the grade of the final examinations.

A special supplemental examination in a course may be written only once, and at the next scheduled examination period.

The grade assigned a special supplemental will be based on the whole year's work, including the special examination.

Students should note limitations on supplemental privileges under individual faculty regulations.

Review of Grades

Students are entitled to review of a final grade. Those wishing to receive such a review should enquire at their Faculty Registrar's Office, after which they may wish to make a formal application for this review. Applications must be filed with the appropriate Faculty Registrar's Office within fourteen days of the official release of grades for the term.

Requests for review are dealt with by the departmental chairmen in consultation with members of the staff.

The fee for review is \$10 per examination, which is refundable if the grade is raised. Students awaiting the outcome of a review must still apply for supplemental examinations by the prescribed deadline.

Release of Grades

Official final grades are released only by the Registrar.
Reports are mailed as soon as possible after release
has been authorized.

Registrarial Services

All registrarial services for Special students are provided by the Office of Continuing Education, Room 302, Administration Building, 231-6660.

General

Special students are those registering in degree-credit courses without having been formally admitted to the University.

Special students may take courses to qualify for admission or readmission, to improve their professional or vocational qualifications, for transfer credit towards a degree program elsewhere, or for personal interest.

Special students enrol in the same courses as students in degree programs and are permitted to take classes in both the Day and Evening divisions.

Admission Status

Courses completed by a Special student will not be credited towards a degree program until formal application for admission is made and the student is officially admitted to the University as an undergraduate (either part-time or full-time).

A Special student may be admitted to degree study upon indicating, through academic achievement at Carleton, a reasonable probability of future academic success.

Normally, in the Faculty of Arts or the Faculty of Social Sciences, a Special student will be admitted after passing at least four full courses with a C- standing or higher in at least two full courses or equivalent.

Normally, in the Faculty of Science, a Special student will be admitted after passing at least four *approved* full courses with a C- standing or higher in at least two full courses or equivalent.

A Special student seeking admission who has completed *more* than four courses: **(a)** must meet the requirements within the previous six full courses preceding formal application for admission; and **(b)** may not present more than two supplemental or special supplemental examinations in meeting the requirements for admission.

The number of courses required for admission to a degree program may be reduced if the Special student is able to present a sufficiently higher grade average. Thus, a student who obtains a B- grade average or better in three successive courses or A- grade average in two successive courses is encouraged to make formal application for admission.

For a person with some university experience (or the equivalent), the number of courses required for

admission to degree study may differ from that indicated above. Advice in this regard may be obtained from the Admissions Office upon formal application.

A student admitted to an undergraduate degree program will normally receive retroactive credit standing in courses successfully completed at Carleton as a Special student.

Special students intending to pursue a degree program in the Faculty of Science, should note that, upon admission, credit may be granted for not more than seven full courses, five of which must meet the First year promotion requirements.

Admission as a Mature Matriculant

Persons who lack the normal entrance requirements as published in the Undergraduate Calendar but who are twenty-three years of age or over, prior to the session in which they wish to enrol, may receive consideration for admission to a degree program.

Any individual who meets the age requirement is technically eligible to be considered for admission as a Mature Matriculant. This category, however, is designed for those individuals who do not meet normal admission requirements but who would probably be successful in university studies.

Mature Matriculants are normally admitted to the First year of an undergraduate degree program. Students who are seeking admission to either the Faculty of Science or the Faculty of Engineering, but who do not hold the necessary prerequisites, may be required to take Qualifying University year courses in addition to the regular program.

All applicants are required to submit proof of age with their application for admission.

Special students who meet the age requirement will normally be considered for admission as Mature Matriculants if, and only if: **(a)** they have obtained a grade of C- or better in at least one full course (or equivalent); and **(b)** are eligible to continue as Special students.

Eligibility to Register

Returning Special students must pass three of their previous five full credits (or equivalent) with a C- standing or higher in at least one full course (or equivalent) to be eligible to receive permission for further registration.

Without documentation to the contrary, a grade of *Abs* (Absent) is judged equivalent to a grade of *FNS* (Failure, no supplemental privileges) for the purpose of determining eligibility to continue as a Special student.

Course Load

Special students may enrol in a maximum of two full courses (or equivalent) per academic session.

In exceptional circumstances, a Special student may enrol in three full courses (or equivalent) in the winter session provided permission is first obtained from the Office of Continuing Education and a C average has been obtained in a minimum of two full courses (or equivalent) completed in the previous session attended.

Special students may enrol in four or five full courses provided any of the following conditions prevail:

1. the student is enrolled full-time in a degree program at another institution and can present a Letter of Permission authorized by an appropriate official of that institution; or
2. the student holds an undergraduate degree from a recognized institution and wishes to pursue further study for professional development or in preparation for entry into graduate study; or
3. the student, on the recommendation of a department, has to upgrade undergraduate deficiencies prior to consideration for admission to a Carleton graduate program. Such students also require the permission of the Faculty of Graduate Studies and Research and are advised to consult the Graduate Studies and Research Calendar.

Course Change and Course Withdrawal

Special students wishing to make a change in their registration must use the appropriate form provided by the Office of Continuing Education.

Course changes must be made by the deadline dates designated in the Academic Year, (see pp. 7-9), and must be approved by the department in which the course is offered. Changes include withdrawal, section changes, as well as changes of status from credit to audit or vice versa.

The official withdrawal or change date will be the day on which the completed form is received in the Office of Continuing Education.

Refund credit, where applicable, is calculated according to a fixed refund schedule determined by the Business Office and is based on the date the completed form is received.

Students withdrawing from the University must return their identity cards, any refund being calculated from the date of their receipt.

A Special student who does not formally withdraw from a course and who fails to write the final examination will be graded *Abs* (Absent), or *FNS* (Failure no supplement-

tal) if term work is incomplete; will not be granted supplemental privileges, and will not be allowed remission or refund of fees.

A Special student who withdraws from a course will retain no credit for any part of that course.

Course Selection

Persons wishing to be admitted eventually to a degree program are advised to note the specific faculty requirements for First year students as listed in this calendar. Special students who have not completed Senior Matriculation or equivalent standing may have to upgrade by enrolling in courses at the Qualifying University year level.

Special students are strongly encouraged to consult directly with departments when selecting specific courses of study.

Supplemental and Special Examination Privileges

A Special student registered in one, two or three courses, who fails only one course, may write one supplemental. Supplemental privileges will not be granted to students who fail more than one of these courses.

A Special student registered in four courses may write one supplemental and one special supplemental only, or two special supplementals.

A Special student registered in five or more courses may write two supplementals or two special supplementals.

Supplemental examinations written by Special students will be graded according to the supplemental regulations of the faculty in which the course is given.

Supplemental privileges will not be granted to a full-time Special student who does not pass at least three courses in the spring.

A Special student who wishes eventually to enrol in a degree program of a faculty at Carleton University is strongly encouraged to pay particular attention to the supplemental examination regulations for that faculty.

Special supplementals are more commonly referred to as "grade raising" examinations.

Special students are eligible for special final examinations (deferred finals) under the conditions indicated on p. 39.

Special students must make application for supplemental and special examinations at the Office of Continuing Education by the published deadlines.

Appeals

A Special student has the right to appeal any decision relating to the application or interpretation of academic regulations made by the Office of Continuing Education.

Appeals must be made in writing and should be submitted to the Secretary, Special Student Policy and Appeals Committee, c/o Office of Continuing Education, Administration Building, Carleton University.

Transfer Credits to Another University

Students who wish to attend Carleton to receive credits toward a degree program taken elsewhere are eligible to register at Carleton as Special students. Such students who wish to exceed the normal course load or attend full-time should write or consult directly with the Records Officer/Counsellor, Office of Continuing Education.

Academic Information Service

The Office of Continuing Education is equipped to offer information and advice to Special students who are currently registered and to prospective Special students. Appointments may be arranged by telephoning 231-6660. Evening appointments are available.

Financial Assistance

Special students interested in obtaining financial assistance are advised to contact the Student Awards Office at 231-3735. At the time of publication, it appeared probable that the Ministry of Colleges and Universities would continue its loan program for part-time students for the 1977-78 academic year. Special students are eligible to take advantage of this program or any other financial aid program for part-time students.

Fees

Notes

Because the Calendar is published several months in advance of the beginning of the academic year, the University reserves the right to change fees without notice.

The Minister of Colleges and Universities has requested Ontario universities to increase their tuition fees for a two-term academic year by \$100 effective May 1, 1977. He has also advised the Ontario universities that the formula fee applicable to foreign students is increased to \$750 per term commencing January 1, 1977. An addendum to this calendar will be issued when the Board of Governors has dealt with the changes in the fee structure arising from these announcements.

Tuition Fees: Undergraduate and Special Students

The annual composite fee includes tuition, Students' Association, Athletics, Health Services and University Centre fees, and where applicable, laboratory, graduation and summer survey camp fees.

Fees for Full-Time Students

(Four or more full courses)

Tuition

| | |
|--|----------|
| Qualifying University Year (all programs), Arts, Journalism, Music, Commerce, Science and Special Students | \$580.00 |
| Engineering, Architecture, Industrial Design | \$640.00 |

Miscellaneous Fees

In addition to the tuition fee above, full-time students, except those registered in St. Patrick's College, will be assessed the following compulsory miscellaneous fees.

| | |
|-----------------------|----------|
| Students' Association | \$ 32.50 |
| Athletics | 50.00 |
| Health Services | 17.50 |
| University Centre | 20.00 |
| Total | \$120.00 |

The Carleton University Students' Association Fee includes a fee of \$1.00 for the National Union of Students and \$1.50 for the Ontario Confederation of Students.

For St. Patrick's College

| | |
|-----------------------|----------|
| Students' Association | \$ 30.00 |
| Athletics | 50.00 |
| Health Services | 17.50 |
| University Centre | 20.00 |
| Total | \$117.50 |

Fees for Part-Time Students

(Fees per full-credit course for students, except those registered in St. Patrick's College, taking fewer than four full courses)

| | |
|-----------------------|----------|
| Tuition | \$113.20 |
| Students' Association | 6.50 |
| Athletics | 10.00 |
| Health Services | 3.00 |
| University Centre | 4.00 |
| Total | \$136.70 |

The Carleton University Students' Association fee includes a fee of \$.20 for the National Union of Students and \$.30 for the Ontario Confederation of Students.

For St. Patrick's College

| | |
|-----------------------|----------|
| Tuition | \$113.20 |
| Students' Association | 5.00 |
| Athletics | 10.00 |
| Health Services | 3.00 |
| University Centre | 4.00 |
| Total | \$135.20 |

Students transferring from a First term half-credit course to a Second term half course will be given credit for the unexpired portion of the First term half course and charged full fee for the Second term half course.

Tuition Fees: Senior Citizens

Persons sixty years of age and older may register for any university credit course(s) for a total fee of \$5.00.

Late Registration Fees

Full-Time students

\$10 first week after the registration period
\$15 second week after the registration period

Part-time students

\$5 (per full course) after the registration period

Method of Fee Payments

Fees may be paid in accordance with either of the following plans.

1. Payment in full at the time of registration.
2. Payment in two installments:
 - (a) At registration, $\frac{1}{2}$ of the total tuition fee plus all miscellaneous fees plus a deferred payment fee of \$.50 per half course (4 or more courses \$5.00);
 - (b) at or before January 15, the remaining half of the total tuition fee.

Scholarships, bursaries, and loans administered by the University shall be applied first to fees provided this is not contrary to the terms of the award.

Personal cheques will be accepted for payment of accounts but the University reserves the right to cancel the use of this method by any student if it is abused. A service charge of \$5.00 will be made for each cheque returned to the University as non-negotiable for any reason. Students are requested to have their own cheque forms available when payments are made.

A statement of tuition fees paid for taxation purposes may be obtained upon application to the Business Office in February, 1978.

Overdue Accounts

Fees are due and payable at the time of registration. However, students may be permitted to select a payment program, in which case the last payment due-date is January 15. Should a student fail to complete the payments as arranged at registration, or fail to make satisfactory arrangements for the discharge of fees or other outstanding amounts by the last payment due-date, the University reserves the right to cancel the student's registration. All charges and outstanding fees accrued to the date of cancellation will remain due and payable on the student's account.

Withdrawal and Refund

See also p. 36.

The composite fee for full-time students is a charge for four full courses or more. No charge is made for the fifth or any additional courses; conversely, no refund will arise as a result of withdrawal from a course by a full-time student unless the change alters his status from full-time to part-time.

Students who withdraw from a course, or from the University, are required to notify their Faculty Registrar in writing, or fill out the appropriate forms in the Faculty Registrar's Office. Students who withdraw from the University must return their identity cards to the appropriate Faculty Registrar's Office immediately. Refunds will be calculated by the date of receipt of the card.

A refund of the composite fee less a registration charge calculated at the rate of \$5.00 per half course for part-time students and \$50.00 for full-time students may be made for withdrawals before the last date for late registration in the First term. After the last date for late registration, the tuition portion of the composite fee less the registration charge is amortized over the period from the first day of classes to the last date for withdrawal with partial refund.

A detailed schedule of refund credits is available at the Business Office.

Miscellaneous fees and deferred payment fees are not refundable.

The appropriate refund credit will be applied to the student's account and any amounts due at that time will be offset before a cash refund is prepared.

Following are the last dates for withdrawal with partial refund of fees; no application for withdrawal and refund will be considered if received after these dates:

1977 Summer Session

See p. 7.

1977-78 Winter Session

October 21, 1977 First term half courses

February 10, 1978 all other courses

Examination Fees

1. Supplemental and grade-raising special examination fees are charged on a per paper basis. The fee, when the examination is written at Carleton University, is \$10.00 per paper; when the examination is written other than at Carleton University, \$20.00 per paper.

2. Examination Fees are non-refundable.

Transcript Fees

All students are entitled to two free transcripts. After these have been issued the fee is \$1.00 for the first, 50 cents for the second and 25 cents for each additional copy at any one time of ordering.

Locker Fees

A fee of \$2.00 is charged for the use of locker space during the academic year. Lockers are allocated on a first-come first-served basis and it may be necessary to share a locker with another student. A refund of locker fees will be made only up to the last date for late registration.

Lockers must be vacated by May 15, after which they will be cleared and any articles found therein will be treated as abandoned. Such articles will be turned over to the University Lost and Found and disposed of without further notice after a period of three months.

Deposit-Gowns and Hoods

At each convocation the University makes available for graduating students appropriate academic regalia. To obtain this regalia students are required to pay a \$25.00 deposit which is refundable when the regalia is returned.

Delinquent Accounts

Registration shall not be complete until a satisfactory arrangement has been made for the payment of fees. It shall remain incomplete until the student's financial obligations to the University have been paid in full in accordance with arrangements made.

When examination results are ready for publication, if a student owes the University on any account his academic file will be sealed. The student will not be permitted to register again until the account has been paid in full by cash or certified cheque.

Parking

Permission to park on the campus is granted for a fee to students and others associated with the University, but this permission is conditional upon co-operation in the observance of the regulations. Infractions will be penalized, and, under certain circumstances, cars will be towed away at the owner's risk and expense. Security Personnel are authorized to issue City of Ottawa traffic tickets on campus. Any vehicle not displaying a valid Carleton Permit is subject to this type of ticket.

In this, as in other respects, examination grades will be withheld from students owing sums of money to the University. Unless cause can be shown, the third infraction may lead to withdrawal of parking privileges. The University accepts no responsibility for cars or their contents parked or operated on the campus. The regulations related thereto are available in the Traffic and Parking Office. Students and staff who bring cars to the campus are expected to make themselves familiar with these regulations. Parking lots are indicated on the map at the back of the Calendar.

Library Regulations

The University Library is located on the south-west side of the main quadrangle. It comprises four divisions: Humanities, Social Sciences, Science and Engineering and Government Documents. The Map Collection is in the Loeb Building, Room D299. The collection numbers over one million items, the majority of which are on open shelves.

The Library is governed by regulations approved by Senate. Copies are available at all information desks.

The Library collection is protected against theft by an electronic book detection system. As a condition of use of the Library all users must submit books, brief cases, bags, etc. for inspection at the exit, if requested to do so. Fines are charged for overdue books, and, as noted under "Delinquent Accounts", examination grades and transcripts will be withheld from students owing money to the University.

Geoffrey H. Briggs, M.A. (Cambridge) Dip. Lib., Dip. Arch. (London) *University Librarian*

Neil Brearley, B.Sc. (London), B.L.S. (Brit. Col.) *Divisional Services*

E. Martin Foss, B.A. (Alberta), B.L.S. (Brit. Col.) *Technical Services*

Verna Z. Wilmeth, B.A. (San José), M.A.L.S. (Mich.) *Administrative Services*

Milly Armour B.Sc. (Glasgow), B.L.S. (Ottawa) *Acquisitions*

Jean Carter, B.A. (Dalhousie), B.L.S. (Toronto) *Humanities*

Gail Catley, B.Sc., M.L.S., (McGill) *Science and Engineering*

Barbara Farrell, B.A. (London) *Maps*

Hilda Gifford, B.A., B.L.S. (McGill) *Collections and Gifts*

Susan Jackson, B.A. (Carleton), B.L.S. (McGill) *Documents*

Bozena Jarkiewicz, B.A. (Carleton), M.L.S. (Toronto) *Serials*

Jeremy Palin, B.A., B.L.S. (Brit. Col.) *Special Collections*

Dorothy Rogers, M.A. (Yale), B.L.S. (Toronto) *Cataloguing*

Elsbeth Ross, B.A. (Queen's), B.L.S. (Toronto) *Social Sciences*

Val Swinton, B.A. (Calgary), B.L.S. (Alberta) *Interlibrary Loans*

Audrey Turner, B.A. (Carleton) *Orientation*

Health Regulations

Medical insurance is compulsory for all full-time students.

All Ontario students should be covered by OHIP.

Students whose home residence is outside Ontario should have coverage under their provincial plan.

Students from outside Canada should apply for OHIP. This application should be made as early as possible because there is a delay in coverage after application.

Students who object to the foregoing requirements on conscientious grounds must consult the University physician, and provide a written statement giving the basis for such objection.

Tuberculosis Control

Every student requires a tuberculin skin test, or chest X-ray if tuberculin positive. These are required to be repeated on a yearly basis while the student is attending university.

Academic Dress

The academic dress of Carleton University is a compromise between the style of hoods outlined in the American Intercollegiate Code and the dress of the ancient foundations of Britain and America. The Bachelor's hood is of simple or Oxford shape, made of black stuff and lined with two chevrons of red and black on a silver field.

The Master's hood, made of black silk, is again of the simple shape but open to show more of the lining. The Doctor of Philosophy hood is again made of silk, but completely opened to show the lining and provided with a purple border.

The border of the Bachelor's or Master's hood denotes the degree granted, according to the following colour combinations: *Architecture*, cerise; *Arts*, white; *Commerce*, camel brown; *Engineering*, orange; *Journalism*, white with a black cord sewn slightly in from the lower border; *Music*, Venetian pink; *Science*, golden yellow; *Social Work*, cream.

The Bachelor's gown, to be worn with the above hoods, is of full length, made of black stuff, with a gathered yoke behind, and long open-fronted sleeves. The Master's gown is of full style, made of black silk or rayon, with full gathered yoke behind and closed sleeves with an opening at the elbows. The Doctoral gown is the same style as the Master's, made of fine royal blue cloth with facings of a light blue silk.

The gown of the Honorary Doctor of Laws, Literature, Science and Engineering is a blue robe with bell-shaped sleeves, made of fine royal blue cloth with facings and sleeves in light blue silk. The hood is made of the same material as the gown, has the same lining as that for the degrees granted by examination, and is bordered with dark mauve for the degree of Doctor of Laws, vibrant blue for the degree of Doctor of Literature, red for the degree of Doctor of Science and orange for the degree of Doctor of Engineering.

Faculty of Arts



Officers of the Faculty

Dean

J. Downey, 2009 Arts Tower

Associate Dean

N.E.S. Griffiths, 2011 Arts Tower

Faculty Registrar

To be announced

Directory of Departments and Schools Offering Courses

Art History, 2204 Arts Tower, 231-2700
 Canadian Studies,* 1017 Arts Tower, 231-4473
 Classics, 2012 Arts Tower, 231-3740
 Comparative Literature,* 1519 Arts Tower, 231-4494
 English, 1812 Arts Tower, 231-3839
 Film Studies, 1708 Arts Tower, 231-6755
 French, 1604 Arts Tower, 231-3639
 German, 1315 Arts Tower, 231-2605
 History, 400 Paterson Hall, 231-2710
 Italian, 1427 Arts Tower, 231-4465
 Journalism, 1110 Arts Tower 231-5530
 Linguistics, 247 Paterson Hall, 231-5573
 Music, A911 Loeb Building, 231-3633
 Philosophy, 2125 Arts Tower, 231-3868
 Religion, 2119 Arts Tower, 231-3861
 Russian, 1301 Arts Tower, 231-4488
 Spanish, 1419 Arts Tower, 231-4465

* Graduate level degree programs only. For details please see Graduate Studies and Research Calendar. For undergraduate courses in Comparative Literature see p. 76.

Faculty Registrars' Offices

Arts and Social Sciences, 312 Paterson Hall
 Science, 212 Herzberg Building
 Engineering, Architecture, Industrial Design,
 353 MacKenzie
 St. Patrick's College, 346 St. Patrick's College
 Graduate Studies and Research, 215 Paterson Hall

Registrar's Office, Arts and Social Sciences, 312 Paterson Hall, 231-6690

Faculty Registrar

To be announced

Records Officers/Counsellors

Social Sciences: To be announced

Arts: C.E. Dence

The Faculty Registrar's Office is responsible for maintaining the permanent record of every student registered in an undergraduate Faculty of Arts program. All changes affecting a student's registration are processed through this office: course and section changes, degree program changes, changes of Major or Honours program, applications for letters of permission for transfer of credit, applications for graduation, review of grades, etc. Failure to consult or inform this office in all matters affecting a student's registration can result in serious inconvenience and academic and/or financial penalty to the student.

Academic counselling is provided through the Faculty Registrar's Office. Students who have questions regarding University and Faculty regulations should arrange an appointment with a counsellor at 312 Paterson Hall (telephone 231-7407). Problems specifically related to the student's Major or Honours program should be addressed to the department concerned.

Appeals of academic regulations are submitted in writing to the Committee on Admission and Appeals through the Faculty Registrar's Office. Students are encouraged to discuss their appeals with a counsellor or with the Faculty Registrar.

Degree Programs

The Faculty of Arts offers four degree programs.

The Bachelor of Arts three-year Major program is designed to provide the opportunity for a liberal education including specialization in one subject of study called the "Major". A Combined Major program in two subjects may be taken with the consent of the departments concerned.

The four-year program leading to the degree of Bachelor of Arts with Honours is designed for students who wish more rigorous and extensive studies in their chosen discipline. Combined Honours programs are offered in a number of areas. The Honours degree is essential as a qualification in certain fields of employment and is a most desirable preparation for those intending to pursue graduate studies or professional training. Students who are considering high school teaching as a career are urged to consider the Honours degree.

The School of Journalism offers a four-year Bachelor of Journalism with Honours degree as well as a one-year post-B.A. degree in Journalism. Both programs aim to prepare students for careers in the mass media.

A Bachelor of Music with Honours is offered by the Department of Music. This degree prepares students for graduate studies in musicology and ethnomusicology and also provides essential preparation for careers in music librarianship, music administration and teaching.

One non-degree program is offered in the Faculty of Arts, a Certificate in the Teaching of English as a Second Language.

Part-Time Studies

All students in the Faculty of Arts are eligible to register on a part-time basis in either Day or Evening courses in the Winter or Summer sessions. In some programs, however, it is not possible to fulfill the degree requirements solely through courses offered in the Evening and Summer sessions. Part-time students should bear this in mind when choosing a Major or Honours discipline. Provisions for completing senior level requirements should be discussed with the prospective Major/Honours department.

Regulations regarding course load, promotion, examinations, transfer of credit and graduation are to be found in the following pages.

Part-time students should note that the degree must be completed within seven years of the date of promotion to the Course Credit System (which will coincide with the completion of First year requirements). Students who fail to meet this requirement will be required to apply for readmission. (See p. 52.) If readmitted they must comply with regulations and requirements in effect at the time of their readmission.

Part-time students wishing to make inquiries regarding their academic program should consult with the Major or Honours department. Students who have not yet declared a Major should contact the Faculty Registrar's Office.

Advice regarding University and Faculty regulations may be obtained from the Faculty Registrar's Office, Room 312 Paterson Hall. Day or evening appointments may be arranged with a counsellor, telephone 231-7407.

Academic Year

Students are strongly advised to familiarize themselves with the important dates of the Carleton Academic Year. The 1977 Summer session dates appear on p. 7; Winter session dates are found on pp. 8-9. Failure to meet deadlines can result in inconvenience and academic and/or financial penalties.

Students taking courses on the University of Ottawa Exchange Agreement or elsewhere by Letter of Permission should note certain important dates in the paragraphs devoted to these procedures. (See below and p. 53.)

Admission Requirements

For a detailed treatment of requirements for admission to various programs in the Faculties of Arts and Social Sciences please consult Admission Requirements and Procedures, pp. 26-30.

Readmission

Arts students returning to studies at Carleton will, in the circumstances detailed below, be required to file a new Application for Admission prior to July 1 for the Fall/Winter session and prior to April 1 for the Summer session. Application forms may be obtained from the Arts Faculty Registrar's Office or from the Office of Admissions (Room 407, Administration Building). Those who must apply for readmission are:

1. students who fail to complete a degree program within seven years of their promotion to the Course Credit System;
2. students who have graduated and who wish to register for a further degree in the Faculty of Arts;
3. all students who have been absent from Carleton for two consecutive Winter sessions. (Students who have been absent for one Winter session may, at the discretion of the Arts Registrar's Office, be required to reapply for admission. Please consult with a counsellor in the Arts Registrar's Office);
4. all students who have been admitted to and taken courses at any other post-secondary institution since their last registration at Carleton. (This does not apply to students who do work elsewhere on a Letter of Permission from Carleton, see p. 56);
5. all students who have forfeited Honours status under the provisions set out on p. 59.

Registration

Students in the Faculty of Arts must register between September 6 and 9. In August all students will be issued a permit to register specifying the time and place at which they must begin registration. Students who do not come at the specified time will be required to register late and pay a late registration fee.

Students who were absent the preceding Winter session must advise the Faculty Registrar's Office by August 1 of their intention to return so that a permit may be issued.

Late Registration

It is possible, on payment of a late registration fee (p. 44), to register up to September 30. However, with classes beginning on September 12, students are warned that by registering late they run the risk of finding sections filled and limited enrolment courses closed.

Campus of Registration

Students who have previously been registered as Rideau River campus students and who wish to transfer to St. Patrick's College campus must file a campus transfer with the Faculty Registrar's Office (312

Paterson Hall) no later than August 1 for the transfer to be effective in time for Fall registration and no later than December 1 for it to be effective in the Second term. Similarly a student previously registered through St. Patrick's College must apply through the St. Patrick's Registrar's Office to transfer to the Rideau River campus.

University of Ottawa Exchange Agreement

Undergraduates registered full-time in the Faculty of Arts at Carleton may elect during their Second or higher year to take their fifth credit at the University of Ottawa without payment of additional fees. Students desiring to avail themselves of this opportunity should obtain registration forms from the Faculty Registrar's Office. It is advisable to do this early in September. Approvals must be obtained from several offices at both universities and the last date for Special Student registration at the University of Ottawa is in early September. Exchange privileges are not available to students registered in fewer than four credits at Carleton.

Students who withdraw from an Exchange Agreement course must do so at *both* universities or they will receive a grade of *Abs*, equivalent to a failure.

Grades are transferred to the Carleton transcript for courses taken at the University of Ottawa on the Exchange Agreement.

Change of Course

Students who change courses or sections within a course *must* notify the Faculty Registrar's Office. All requests to make changes must be made by the deadlines listed under "Academic Year" pp. 7-9. Requests made after these deadlines will be granted by the Committee on Admission and Appeals only in the most exceptional circumstances.

Withdrawal

Arts students who wish to withdraw from courses or from their entire program must notify the Faculty Registrar's Office before the final dates for withdrawal published under "Academic Year" (see pp. 7-9). Students who withdraw officially from courses after these dates will be granted a "withdrawal with academic penalty", (*Abs*) which is equivalent to a failure without supplemental privileges. No student may withdraw from a course after the last day of classes.

Warning:

The onus for notifying the Faculty Registrar's Office of intent to withdraw rests solely with the student. Ceasing to attend lectures or informing the instructor does not constitute an official withdrawal. Courses "dropped" in this way will be assessed a failing grade. No exceptions will be made.

Confirmation of Registration and Biographical Information

In the latter part of the Fall term students will be mailed a "Confirmation of Registration" listing the courses and sections in which they are registered and showing the biographical information which appears in their file. Any errors or changes in this information must be reported to the Faculty Registrar's Office at once. This procedure is essential to ensure the accuracy of the student's transcript.

Change of Degree Program

Arts students who wish to change degree programs and students who have been required to withdraw from a degree program and who wish to be admitted to another degree program must notify the Faculty Registrar's Office no later than the final dates listed on pp. 8-9.

Although applications for degree transfers to be effective in the Fall term may be submitted as late as September 16, students who wish their transfer to be completed in time for Fall registration must submit this transfer request no later than July 1. Otherwise they may be required to register late and pay a late registration fee.

Student Records

Information recorded at the time of registration is used by the offices which issue grades, transcripts, promotion decisions, etc. Inaccurate or out-of-date information could cause serious inconvenience, such as a delay in receiving awards, results, notification of a need to write a supplemental examination.

Students must report immediately any changes in the following:

1. permanent or home address (final grades and permits to register are sent to this address);
2. local address (all mail will be sent here during the academic session);
3. telephone number for permanent address and for local address;
4. citizenship or immigration status in Canada;
5. name.

Auditing Courses

Students may, with the instructor's permission, register in courses with the status of auditor (see p. 35 for details). Auditors will receive no grade and no credit for the course. The deadline for changing the status of a course from credit to audit or from audit to credit will be the final date for registration in the course. Appeals for changes after that date must be addressed to the Committee on Admission and Appeals. They will be granted only in the most unusual circumstances.

No appeal for credit initiated after the last day of classes in the course will be considered.

Academic Information

Credit Value

Courses marked * are half-courses worth one-half (0.5) credit. Unless otherwise indicated, all other courses are worth one full credit (1.0).

Course Load

In the Winter session the normal course load for a full-time student is the equivalent of five full credits. A part-time student will be permitted up to two full credits. Audited courses are included in the credit count.

In the Summer session students may enrol in up to two full credits. Audited courses and courses in which a student has registered for a supplemental examination will be included in the credit count.

Permission to exceed these specified limits to a maximum of six credits in the Winter and three credits in the Summer must be obtained both from the Major or Honours departmental adviser and from the Faculty Registrar's Office. Permission will normally be granted to a student who has maintained a C average overall and in his or her Major and was registered in five credits in the previous session (two credits if the last registration was as a part-time student). Qualifying University year students will not be permitted to exceed the normal course load specified above.

Standing in Courses

Standing in courses will be shown by alphabetical grades as described on p. 37. Supplemental examinations will be graded by the same scale.

In addition the following symbols will apply in the Faculties of Arts and Social Sciences only:

Abs

Absent from formally scheduled final examinations where the necessary termwork has been completed. (This grade bears academic penalty in that for purposes of promotion and calculation of certain averages it is interpreted as an *FNS* grade.)

Def

Final grades deferred for personal or medical reasons with prior approval of the Committee on Admission and Appeals.

IP

Honours thesis or essay is "In Progress". (See p. 59.)

Computation of Averages

The twelve grade point system is set out on p. 37. The grade points earned in any specific course are determined by multiplying the grade points corresponding to the grade by the credit value of the course. Thus an A+ in a half-credit course will earn the student six

grade points, while A+ in a two-credit course would be worth twenty-four grade points.

Grade Point Averages are calculated by dividing the total accumulated grade points by the total credits. Both the credits and the grade points are doubled in the case of double-weighted courses.

Failures are included in the calculation of averages to determine eligibility to enter a Major or Honours program, and to register in more than the normal course load. Failures are not included in the calculation of graduation averages.

Averages for graduation are calculated on the grades earned in the number of courses required by the degree, taking first into consideration the grades earned in the courses of the Major or Honours department. Some departments include all courses in the Major/Honours field; others include only those required by the program. Courses not required for the degree will be designated "Extra to Degree" on the official transcript. For further details please consult a counsellor.

Promotion

Promotion and Probation regulations as detailed below apply to students who registered for the first time in September 1974 or later and who have not subsequently been promoted to the Course Credit system or been readmitted. Students who first registered prior to September 1974 are governed by the regulations set out in the 1973-74 calendar.

Qualifying University Year, First Year, Certificate in the Teaching of English as a Second Language

A full-time student will be required to pass four credits and obtain C- or better in two credits. At the end of First year a student who is promoted will proceed on the Course Credit system.

A part-time student must pass four of the first six credits attempted and obtain C- in two credits.

Course Credit System

Upon successfully meeting promotion requirements at the end of First year the student will proceed on the Course Credit system. Under this system there is no promotion from one year to the next. Credits are accumulated individually according to a pattern approved by the Faculty and the Major or Honours department.

Students must complete their program within seven years from the date of promotion to the Course Credit system.

After promotion to the Course Credit system a student in a three-year degree program may accumulate a maximum of five supplementals, grade-raising examinations, repeated courses, course replacements. A student in an Honours degree program may accumulate only three.

Conditional Pass

Full-time students who are not on the Course Credit system and who pass three credits in the Spring examinations will be considered to have passed their year conditionally. They must pass an additional credit and obtain C- in two credits by the end of the August examination period to be promoted.

A student who has passed conditionally may write supplemental examinations and take replacement courses in not more than a total of two credits in the Summer session.

Failure and Probation

A student who fails to meet the promotion requirements set out above and who is not on the Course Credit system will be deemed to have failed. Credits passed will be retained as credits towards the degree. These credits may not, however, be used to meet subsequent promotion requirements.

A full or part-time student who has failed may continue on probation. To clear a probationary status a full-time student must pass four credits and obtain C- or better in two credits in the Spring final examinations. A part-time student must pass four credits of the next five attempted and obtain C- in two of these credits.

Ineligible to Return

A student on probation who fails to meet the terms of probation, thereby failing for a second time, is ineligible for further registration in a degree program in the Faculties of Arts or Social Sciences.

Examinations

University regulations governing examinations are to be found on pages 39-40. Please read this section carefully. In addition, students in the Faculty of Arts are subject to the regulations set out below.

Supplemental Examinations

Students may request permission to write a supplemental examination in a course for which they have received a grade of F. No student will be permitted to write a supplemental in a failed course for which he has received a grade of FNS or Abs.

Deferred Examinations

Students unable to write a final examination because of illness or other circumstances beyond their control, or whose performance on the examination has been impaired by such circumstances may apply within fourteen days to the Committee on Admission and Appeals through the Faculty Registrar for permission to write a deferred examination. For details regarding procedures please consult the section "Special Final Examinations", p. 39.

Deferred examination privileges will not be granted to accommodate students who make travel plans that conflict with the official examination period.

Grade-Raising Examinations

A student may request permission to write an examination in a course already passed. No more than three grade-raising examinations may be written in any degree program (including Qualifying University year). Please refer to "Special Supplemental Examinations", p. 39.

The grade received on this examination will supersede the previous grade whether it is higher or lower. For this reason students are strongly advised to consult with a counsellor before applying for a grade-raising examination.

Supplemental and Grade-Raising Privileges

Regulations which Apply to All Students

1. No student may write more than three grade-raising examinations in the course of degree studies.
2. Honours students may not present more than three credits of the following after promotion to the Course Credit system: supplementals, grade-raising examinations, repetitions, replacements.
3. Pass degree students may not present more than five credits of the following after promotion to the Course Credit system: supplementals, grade-raising examinations, repetitions, replacements.
4. No student may write supplemental and/or grade-raising examinations in more than two credits in any academic year.

Regulations which Apply to Students not on the Course Credit System but Admitted in the Fall of 1974 or Later

1. Students who fail their year may not write supplementals or grade-raising examinations.
2. Students who pass conditionally in the Spring but fail to meet the terms of promotion by the end of the Summer may not write supplementals or grade-raising examinations unless they are potential Fall graduates.
3. Part-time students who fail more than two credits in a single session may not write supplementals because they have failed and will be on probation.
4. Part-time students may not write supplementals in more than two of their first six credits.

Students not on the Course Credit system who first registered prior to 1974 (Fall) must consult the 1973-74 calendar on the matter of supplemental privileges or consult with the Faculty Registrar's Office.

Residence Requirement

All students will normally be required to complete their final five credits as full or part-time students at Carleton University. In special circumstances, a student may request permission to take up to two of these final credits elsewhere. Requests should be addressed to the Committee on Admission and Appeals, c/o Arts Faculty Registrar's Office and must be accompanied by the completed application for Transfer of Credit (see below).

Transfer of Credit

Students in good standing in the Faculty of Arts may, with prior permission, take courses at another university and have the credit transferred to their degree program at Carleton. The course must be acceptable to the Carleton department teaching the discipline, the Major/Honours department and the Faculty Registrar.

Grades for courses taken on a Letter of Permission are not normally transferred.

Applications for a Letter of Permission may be obtained from the Faculty Registrar's Office, 312 Paterson Hall. The application form must be returned to that office accompanied by a photocopy of the official description of the course taken from a current calendar and by a copy of the host university's definition of course credit.

Although every effort will be made to see that Letters of Permission are issued in time for registration, it is not possible to guarantee service for requests that are not received, complete with all documentation, before August 1 for Fall registration and before April 1 for Summer registration.

Warning:

Students who take courses without obtaining a Letter of Permission from the Faculty Registrar's Office cannot be guaranteed that credit will be given for the courses. Permission obtained from an instructor or from a department does not obligate the University to accept a credit.

Appeals

The Committee on Admission and Appeals meets from time to time throughout the year to consider appeals from students in Faculty of Arts programs who request special consideration respecting rules and regulations governing their programs and status.

Appeals should be addressed to the Committee on Admission and Appeals, c/o Faculty Registrar, Room 312 Paterson Hall.

Students wishing assistance in preparing their appeals are invited to consult with the Counsellors in the Faculty Registrar's Office.

Qualifying University Year

Students in Qualifying University year must present five credits. This program must include two of items 1, 2 and 3 below. The remaining credits are to be selected from the list of courses on pp. 60-62.

1. English 18.010
2. Mathematics 69.006* and 69.007*
3. a language other than English

Students planning to apply for admission to the Bachelor of Journalism program must take a modern language course. Students intending to apply for the Bachelor of Music program should discuss the choice of a Music course with the Chairman of the Music department.

First Year

First year B.A. Students will register in five credits from the list on pp. 60-62. Normally, students are advised not to take more than two credits from the same discipline in First year.

Many departments have prerequisite courses which must be taken in First year if a student wishes to continue in a particular subject.

While the University will make every effort to allow students to enrol in a program of their choice, it is recognized that enrolments may have to be limited in certain of the more popular First year subjects.

Courses from other Faculties

Students in Faculty of Arts degree programs may generally select their optional courses from the Faculty of Arts, the Faculty of Social Sciences, the Faculty of Sciences and the Interfaculty courses. Certain professional courses offered by the School of Journalism, the School of Architecture, School of Industrial Design and the Faculty of Engineering are not acceptable for credit.

For further information regarding the acceptability of these courses, students must consult with their Major or Honours department and the Faculty Registrar's Office.

Bachelor of Arts: Major

Note: All B.A. (three year) students on the Rideau River campus must declare a Major, or a Combined Major by Second year.

Major Programs Offered

Art History
 Biology (see pp. 254 and 331)
 Classical Civilization (see Classics)
 Economics
 English
 Film Studies
 French
 Geography
 German
 Greek (see Classics)
 History
 Italian
 Latin (see Classics)
 Linguistics
 Mathematics (see pp. 278 and 362)
 Mathematical Sciences (see pp. 278 and 362)
 Music
 Philosophy
 Political Science
 Psychology
 Religion
 Russian
 Sociology/Anthropology
 Spanish

Combined Major Programs Offered

Art History
 Classical Civilization (see Classics)
 Economics
 English
 Film Studies
 French
 Geography
 German
 Greek (see Classics)
 History
 Italian
 Law
 Latin (see Classics)
 Linguistics
 Mathematics (see pp. 278 and 362)
 Music
 Philosophy
 Political Science
 Psychology
 Religion
 Russian
 Sociology/Anthropology
 Spanish

Degree Requirements

Candidates will present a total of twenty full credits or equivalent after Junior Matriculation, or fifteen after Senior Matriculation.

Major Requirements

Major shall consist of between five and seven credits in the Major field. Students electing to take a Combined Major must offer four or five credits in each Major

discipline. Exact numbers of credits and lists of required courses are set forth in the departmental entries which follow.

Declaring a Major

Students may apply to declare or to change a Major at any time after having completed the introductory course in the discipline in which they wish to Major. It is strongly recommended that the Major be declared at the beginning of Second year. Applications may be made during the registration process or, during the remainder of the year, through the Faculty Registrar's Office.

Entrance to and Continuation in a Major

To be accepted into a Major students must have at least a C- average in the courses of their Major or Majors. Students whose Major average is less than C- at the end of Second year may be required to withdraw from their Major.

Application to Graduate

Students expecting to graduate in the Spring must make application on the appropriate form in the Faculty Registrar's Office by February 1, and those expecting to graduate in the Fall, by September 1.

Graduation Requirements

1. Fifteen credits beyond Qualifying University year.
2. A minimum of eight credits at the 200 level or higher.
3. Requirements of Major program.
4. A minimum grade of C- in half the courses presented.
5. A minimum average of C- in the Major field or, in the case of double majors, in each Major field.
6. A time lapse after promotion to the Course Credit system of no more than seven years.
7. Not more than five of the following after promotion to the Course Credit system: supplemental examinations, grade-raising examinations, course replacements, course repetitions.

Note: In calculating the average in the Major some departments count all courses taken in the Major field while others count only the courses required. Students who have any questions about the calculation of their graduation average are advised to consult with a counsellor.

Courses taken in Qualifying University year are not included in calculating item 4 above.

Distinction

Graduating students in a three-year program will be designated as graduating "with distinction" if:

1. they have successfully completed the fifteen credits required for the degree without a course failure, supplemental, repetition or replacement; and

2. the ten courses taken beyond the First year requirements were:

(a) approved by the candidates' Department and Faculty and completed while they were registered students of Carleton University;

(b) graded by Carleton either directly or by acceptance and translation of the grade from another academic institution (at least five of these courses must be taken at Carleton University); and

(c) graded under the Carleton University system and the grade point total was at least ninety grade points.

Journalism (see B.J. p. 63)

Latin (see Classics)

Law

Linguistics

Mathematics (see pp. 278 and 362)

Music

Philosophy

Political Science

Psychology

Religion

Russian

Sociology

Soviet and East European Studies

Spanish

For details of the programs see the departmental entries.

Bachelor of Arts: Honours

Note: These regulations also apply to students in the Bachelor of Journalism, and Bachelor of Music programs.

Honours Programs Offered

Anthropology

Art History

Classical Civilization (see Classics)

Commerce (see B.Com. p. 320)

Economics

English

French

Geography

German

Greek (see Classics)

History

Journalism (see B.J. p. 63)

Latin (see Classics)

Linguistics

Mathematics (see pp. 278 and 362)

Mathematical Sciences (see pp. 278 and 362)

Music (see B.Mus. p. 123)

Philosophy

Political Science

Psychology

Public Administration

Religion

Russian

Sociology

Soviet and East European Studies

Spanish

Combined Honours Programs Offered

Anthropology

Art History

Classical Civilization (see Classics)

Economics

English

French

Géography

German

Greek (see Classics)

History

Italian

Admission to Honours

New students seeking admission directly to an Honours program should refer to the general admission requirements outlined on pp. 25-30.

In-course students may apply for Honours at any time after having completed the introductory course in the discipline in which they wish to specialize. They are strongly advised to discuss their academic career with the Honours adviser of the Department before making formal application for Honours.

Application for Honours may be made in the course of registration or, during the remainder of the year, through the Faculty Registrar's Office. Applications for Honours which involve a change of degree (B.A. to B.J. for example) must be made on a Degree Transfer form at the Faculty Registrar's Office and are subject to deadlines as set out on p. 53.

For entry into Honours, a student must have a grade point average of 6.0 or better in the Honours subject and 4.0 or better overall and the recommendation of the Honours Department or Departments.

While the consent of the Department or Departments concerned is necessary for entry to an Honours program, the Department cannot establish a standard of entrance based on a grade point average which is higher than that established by the Faculty as set out in the foregoing paragraphs. Students who consider that they meet the requirements for entry to an Honours program but who have not been accepted by any Department may appeal to the Committee on Admission and Appeals for review of their case. The Committee will report to the Arts Faculty Board on all such appeals. It should be noted, however, that departmental capacities to accept all qualified Honours candidates may be limited by physical resources.

Continuation in Honours

For continuation in an Honours program a student must maintain a grade point average of 6.0 or better in the Honours subject or subjects and 4.0 or better overall.

At the beginning of their last five credits, students in Honours must have a grade of C- or better in at least half of the courses to be credited towards the degree.

Students who fail to maintain Honours standing must withdraw from the Honours program. They may apply for admission to a Major program. Students in this situation are advised to contact a counsellor in the Faculty Registrar's Office.

Degree Requirements

Candidates for a degree with Honours will complete twenty-five full courses or equivalent (twenty-six for Journalism) if admitted from Junior Matriculation, or twenty full courses or equivalent (twenty-one for Journalism) if admitted from Senior Matriculation.

Honours Program Requirements

Please consult the outline of requirements in each departmental entry. Questions about requirements should be addressed to the Honours adviser of the Department concerned.

Application for Graduation

Students expecting to graduate in the Spring must complete an "Application for Graduation" in the Faculty Registrar's Office by February 1, and those expecting to graduate in the Fall, by September 1.

Graduation Requirements

1. Twenty credits beyond Qualifying University year as set out in departmental regulations (twenty-one credits for Journalism).
2. A minimum of eleven credits at the 200 level or higher.
3. Requirements of the Honours program.
4. A minimum of C- in half the courses presented for the degree.
5. A minimum grade point average of 6.0 in each Honours field and 4.0 overall.
6. A time lapse after promotion to the Course Credit system of no more than seven years.
7. Not more than a total of *three* of the following after promotion to the Course Credit system: supplemental examinations, grade-raising examinations, course replacements, course repetitions.

Note: In calculating the average in the Honours discipline some Departments include all courses in that discipline while others include only the courses required in the program. Students who have any questions about the calculation of their graduation average are advised to consult with a counsellor.

Courses taken in Qualifying University year are not included in graduation requirements except where they include a course required by the program.

Honours Thesis or Research Essay

The Honours thesis or essay must be submitted to the Chairman of the Department or Departments before April 1, or such other date as the Department may specify for Spring graduation. If the thesis or essay has not been completed by this date, it will be recorded as "In Progress".

If the Honours thesis or essay is not submitted to the Department before June 1, and the grade reported to the Dean by July 1, the student may, with the Honours supervisor's consent, re-register for the course in the Summer session and pay the appropriate fee. The completed project must be submitted to the Chairman of the Department by the first day of classes in September, and the final grade must be submitted to the Office of the Dean by October 1 for Fall graduation.

If this requirement has not been met, the student must re-register in September for the course and pay the appropriate fee. The thesis or essay must be submitted by April 1 to the Chairman of the Department. If the completed work is not submitted by this date, a grade of F will be recorded and the student will forfeit his Honours status.

With the recommendation of the Honours supervisor, a student may appeal to the Chairman of the Department to repeat the Honours thesis or essay. If permission is granted, the student will be required to register in the Honours thesis or essay at a full fee.

Students who first registered in the Honours Research essay since September 1974 must complete the project within eighteen months as stated above. Students who first registered in the essay prior to that date are not subject to this limit. They may, however, be subject to readmission regulations. (See p. 52.)

Students may withdraw from the first registration in an Honours thesis or essay without academic penalty or loss of Honours status up until the last date for withdrawal from a full-credit course.

Students who receive a grade of *IP* and subsequently re-register for an Honours thesis or essay shall be permitted a withdrawal up until the last day for withdrawal, but in so doing they forfeit their Honours status within the department. If they wish to re-enter the Honours program in the following academic session, they must appeal to the Chairman of the department. The decision of the department must be conveyed in writing to the Registrar. Students who are permitted re-entry to the Honours program will be required to register in the Honours thesis as though it were a new registration and will therefore be charged a full-credit fee instead of the half-credit re-registration fee.

Where the student has been absent for a year or more and seeks re-entry to the Honours program, a formal application for readmission must be filed with the Admissions Office.

Classes of Honours Degree

Three classes of Honours are awarded. They are determined by the grade point average as follows:

First Class

9.0 – 12 in Honours subjects and 7.0 or better overall

High Second Class

8.0 or better in Honours subjects and 6.0 or better overall

Second Class

6.0 or better in Honours subject and 4.0 or better overall

Departments may recommend the next higher class of Honours degree in the case of a student one of whose averages is in the appropriate higher range and the other within 0.2 grade points of the higher range.

To determine the class of degree for students in Combined Honours programs the average is taken in each of the two subjects, and the simple average of the two is used. If agreeable to both of the Departments concerned, the final average may be computed on the basis of the weighted average of the required number of Honours courses in the two subjects.

Courses Open to Qualifying University Year and First Year Students

The following courses may be taken by Qualifying University year and First year students. Registration will not be permitted in courses which do not appear in this list.

Courses marked * are for students intending to do a Major or Honours program in that discipline. Courses marked ** may be taken only with special departmental approval.

Courses in the Faculty of Arts

Art History

- 11.100 Survey of the History of European Art
- 11.105 Survey of Canadian and American Art
- 11.110 An Introduction to Architectural History
- 11.210 Classical Art and Archaeology
- 11.220* Western Medieval Art
- 11.230* Renaissance Art
- 11.240* Mannerist and Baroque Art
- 11.250* Rococo and Romantic Art
- 11.260* Modern Art

Classical Civilization

- 13.102* Aspects of Greek Civilization
- 13.103* Aspects of Roman Civilization
- 13.209 Greek and Roman Literary Genres
- 13.230 Classical Art and Archaeology
- 13.231 Methods and Techniques of Archaeology
- 13.235 Ancient Science and Technology
- 13.290 History of Greece: the Classical Period
- 13.291 History of Ancient Rome: Late Republic – Early Empire

English

- 18.100 English Authors from Chaucer to T.S. Eliot
- 18.101 English and Continental Texts: Dante to T.S. Eliot
- 18.102 Form and Tradition
- 18.162 Twentieth Century Literature*
- 18.209 Greek and Latin Literary Genres**

Film Studies

- 19.100 Introduction to Film Studies

French

- 20.001 Elementary French
- 20.011 Intermediate French
- 20.106* Reading French
- 20.107* Practical Phonetics
- 20.108 French Language Course for Non-Majors
- 20.111 Advanced French (A)*
- 20.112 Advanced French (B)*
- 20.151 French-Canadian Literature
- 20.152 French Literature
- 20.161 Introduction to Literature (A)*
- 20.162 Introduction to Literature (B)*
- 20.163 Introduction to Literature (C)*
- 20.181 Civilization I

German

- 22.015 Introductory German A
- 22.016 Deutsch I
- 22.100 Intermediate German A
- 22.101 Intermediate German B
- 22.102 Intensive Introductory German (two credits)
- 22.201* Spoken German**
- 22.202* Written German**

Greek

- 15.015 Introduction to Language and Reading
- 15.100 Literature and Reading

History

- 24.014 The Origins of North American Society
- 24.105 Civilization During the Middle Ages
- 24.112 Europe in Modern Times
- 24.113 A Political and Diplomatic History of Europe from 1715 to 1919

Any 200-level course in History may be taken by First year students but not by Qualifying University year students.

Italian

- 26.015 Introduction to Italian
- 26.100 Intermediate Italian A
- 26.105 Intermediate Italian B
- 26.201* Italian Conversation**
- 26.202* Italian Composition**

Journalism

- 28.110 Introduction to Human Communication
- 28.201 Mass Media in Modern Society (First year students only)

Latin

- 16.015 Beginning Latin
- 16.100 Literature and Reading

Linguistics

- 29.100 Introduction to Linguistics
- 29.220 Teaching English as a Second Language (Prerequisite or concurrent registration: Linguistics 29.100)
- 29.225 Practicum in the Teaching of English as a Second Language (Prerequisite or concurrent registration: Linguistics 29.220)

Music

- 30.050 Elementary Materials of Music
- 30.100 Introduction to the Music of Western Civilization
- 30.150 Materials and Techniques of Music**
- 30.190* Performance 1(1)*
- 30.195* Performance 1(2)*
- 30.201 The Vocal and Choral Literature of Western Music
- 30.202 The Keyboard Literature of Western Music
- 30.203 Orchestral and Chamber Music Literature
- 30.204 Music of Western Christian Church from the Reformation to the Present
- 30.210* Music in the Middle Ages**
- 30.211* Music in the Renaissance**
- 30.212 Music in the Baroque Era**
- 30.213* Music in the Classical Era**
- 30.214* Music in the Romantic Era**
- 30.215 Twentieth Century Music

Philosophy

- 12.101* Ethics and Philosophy of Religion
- 12.102* Knowledge and Meaning
- 12.103* Philosophical Texts I
- 12.105 Philosophical Texts
- 12.106* Metaphysics and Theory of Knowledge
- 12.107* Philosophical Texts II
- 12.110 Consciousness and Reality
- 12.120 Reason and Argument
- 12.140 Explanation and Objectivity
- 12.150 Contemporary Moral, Social and Religious Issues

Portuguese (offered in the Department of Spanish)

- 38.016 Introductory Portuguese
- 38.106 Intermediate Portuguese

Religion

- 14.100 Exploring Religious Experience: Asian Traditions
- 14.120 Origin and Early Development of Judaism and Christianity
- 14.130 Religion and Modern Culture
- 14.201 Women in Religious Traditions
- 14.207 Religions of the Ancient Near East
- 14.236* Selected Topics in Religion
- 14.237* Selected Topics in Religion
- 14.238* Death and the Afterlife
- 14.240 Judaism and the Jewish People

Religion — Languages

- 34.016* Introduction to Arabic (offered in Linguistics)
- 34.115 Introduction to Biblical Hebrew
- 34.117 Introduction to Sanskrit

Russian

- 36.015 Introductory Russian
- 36.100 Intermediate Russian
- 36.201* Russian Conversation
- 36.110 Scientific Russian
- 36.200 Advanced Russian
- 36.203 Russian Grammar
- 36.250 Russian Classics of the Nineteenth Century
- 36.260 Russian Literature in Translation
- 36.301* Advanced Russian Conversation

Spanish

- 38.015 Introductory Spanish
- 38.100 Intermediate Spanish
- 38.101 Intensive Intermediate Spanish*
- 38.102 Intensive Introductory Spanish* (two credits)
- Intensive Spanish Program: First term: St. Patrick's College (2½ credits) Second term: Spain (2½ credits)

Ukrainian (offered in the Department of Russian)

- 36.116 Introductory Ukrainian
- 36.216 Advanced Ukrainian

Note: With special departmental approval, the following Departments will allow First year students to take certain courses numbered 200 and above: Art History, Classics (Greek, Latin), French, German, History, Italian, Music, Philosophy, Russian and Spanish.

*Interfaculty**Computing Science*

- 95.101* Introduction to Computers for the Social Sciences
- 95.102* Introduction to Computing Science
- 95.104* Introduction to Data Processing

Interdisciplinary

- 10.100 Humanities: An Examination of Selected Works from Biblical Times to the Present
- 60.100 Science: Man and His Environment

Courses in the Faculty of Social Sciences

Please refer to p. 318

*Courses in the Faculty of Science**Biology*

- 61.100 General Biology
- 61.101 Introductory General Biology
- 61.190 Biology and Man

Chemistry

- 65.010 Introductory Chemistry
- 65.100 General Chemistry
- 65.106 General Chemistry (for non-Science Students)

Geology

- 67.100 General Geology
- 67.111*, 67.112* Geology, Environment and Man I and II
- 67.204* Earth, Resources and Society**

Mathematics

- 69.006* Functions and Relations
- 69.007* Introductory Calculus
- 69.102 Calculus*
- 69.106* Pre-calculus Mathematics
- 69.107* Elementary Calculus I*
- 69.112 Algebra*
- 69.117* Elementary Algebra*
- 69.127* Topics in Calculus and Algebra*
- 69.131* Excursions into Mathematics I
- 69.132* Excursions into Mathematics II
- 69.141* Gambling I
- 69.142* Gambling II

Physics

- 75.010 Pre-University Physics
- 75.100 Introductory Physics
- 75.105 Introductory Physics (for non-Majors)
- 75.120 Introduction to Astronomy
- 75.190 Astronomy (for non-Science students)
- 75.195 Physics of Music (for non-Science students)

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Robert Blackwood

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Elspeth Chisholm

Sarah Jennings

Field Work Supervisors

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Ernie Calcutt (CFRA)

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Dal Warrington (Canadian Press)

Gordon Eastwood (The Ottawa Journal)

Burns Stewart (Canadian Broadcasting Corporation)

Max Keeping (CJOH)

Fran Cutler (Canadian Broadcasting Corporation)

Stephen McNamee (Information Services Branch,

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Michael Oliver, President of the University

G. Stuart Adam, Director of the School

J.I. Jackson, Registrar of the University

James Downey, Dean, Faculty of Arts

Bachelor of Journalism Honours Programs

Candidates for the degree of Bachelor of Journalism with Honours are required to complete a four-year course of studies after Senior Matriculation. Journalism courses, with the exception of a few seminars, are offered in the Day division only. Optional courses, however, are offered in the Evening division, and Second year requirements are offered in the Summer session.

The aim of the program is not to train technologists; it is to give students the ability to investigate, interpret and communicate intelligently in any of the mass media. To this end, courses are designed to give students both professional skills and an understanding of how media function, in order that they can adapt to the various areas of modern journalism. Advantage is taken of the many resources outside the University provided by the location of the University in the national capital.

Combined Honours

Honours programs may be taken by students in the four-year undergraduate program in which Journalism is combined with other programs by arrangement. The minimum requirements are the same as those for the Bachelor of Journalism with Honours, with the exception that students in Combined Honours may write their graduating research paper for either of the participating departments. In some cases these arrangements have been formalized into intra-departmental regulations.

(See, for example, Combined Honours program in Journalism and Political Science, p. 364 and in Journalism and Economics, p. 334.) Regulations governing Combined Honours in Journalism and Psychology and in Journalism and English have also been approved. For details consult the departments concerned.

One-Year Course

A one-year course leading to the Bachelor of Journalism degree with Honours is open to students who are already university graduates.

Admission Requirements

First Year

To the First year of the course leading to the Bachelor of Journalism degree:

1. Completion of Qualifying University year with a grade point average of 4.0 or better.
2. The Ontario Secondary School Honour Graduation Diploma with a *minimum* 65% average and including a language other than English (French is recommended).

Selective Admission

It should be noted that the number of student spaces in the School is limited. Because of this we expect that it may not be possible to grant admission to all applicants who meet the foregoing requirements. Admission will therefore be on a selective basis with preference given to those candidates who show the highest promise of success in the course.

Second and Subsequent Years

Admission to Second year will be guaranteed only to First year Journalism students who maintain a 7.0 overall grade point average in First year and achieve a minimum B- in Journalism 28.100.

Students may normally be permitted to transfer into Second year Journalism provided they have a minimum B- average in their First year and provided they make up First year Journalism requirements: Journalism 28.100, 28.101* and a language, preferably French.

Note: Journalism students must become reasonably proficient on the typewriter as soon as possible. All assignments in the professional journalism courses are done by typewriter.

Course Requirements

Candidates for the degree of Bachelor of Journalism take a total of twenty-one courses in four years. The courses consist of subjects from those listed as follows:

First Year

Journalism 28.100 and 28.101*
A language course, preferably French*
Three approved options

*Students may substitute an approved option if they can demonstrate a proficiency in the French language to the degree required to report accurately in English on statements and research materials in French. Students whose native language is other than English may have the language requirement waived.

Second Year

Journalism 28.200 and 28.220
An approved course in Canadian history, normally History 24.230*
Two approved options

*Students who expect to practise Journalism in another country may be advised to choose a different History course.

Third Year

Journalism 28.320, 28.321* and 28.351*
Three and one-half approved options. These options must include at least one but may include additional Third year Journalism courses. Furthermore, a student should continue working towards the departmental requirement that before graduation four courses be taken in a field other than Journalism, with at least one of these courses at the 300 level or higher. The Journalism courses available as options are: Journalism 28.300, 28.301, 28.305*, 28.306*, 28.310, 28.333 and 28.352*.

Fourth Year

At least one of Journalism 28.490 or 28.421, and 28.498. Three approved options. Students will note the departmental requirement described above regarding non-Journalism courses. The Journalism option offered in Fourth year is Journalism 28.400.

Academic Standing

A candidate for the degree of Bachelor of Journalism with Honours must have at least C level standing in his/her Journalism courses, and be recommended for graduation by the School.

If after the regular examinations in any year a student is below that C standard, he or she should raise his/her grades in some subjects by writing special supplemental examinations. Students may not continue into Third year without satisfactory standing. Admission to Third year will be based on a minimum of (1) C standing in Journalism 28.200 (2) an average of C in the three Journalism subjects taken for credit in the first two years: Journalism 28.100, 28.200 and 28.220 (3) an overall grade point average of 3.6 (4) completion of Journalism 28.101*.

One-Year Program

The holder of a Bachelor's or Master's degree in Arts or any field may be permitted to enrol in the one-year program and, if his or her background has reached the required standard, may qualify for the degree of Bachelor of Journalism with Honours in one academic year of five and a half courses. If the background is insufficient, one or more additional credits may be required for the degree.

The one-year program will normally consist of the following:

1. Journalism 28.321* (Career Seminars)
2. Journalism 28.434* (Media and Society I) and Journalism 28.435* (Media and Society II)
3. Journalism 28.461* (Perspectives on Modern Society) and Journalism 28.462* (Public Issues in Canada)
4. Journalism 28.440* (Media Practices) and Journalism 28.445* (Editorial Techniques)
5. Journalism 28.441* (Reporting Laboratory I) and Journalism 28.442* (Reporting Laboratory II)
6. Journalism 28.499 (Honours Research Project)

Students enrolled in the one-year program as the Qualifying year of the Master's program in the communications stream will be required to take five credits including a seminar in communications research, described in the course list under Journalism 28.301, and omitting Journalism 28.321*, 28.445* and 28.499. Students proceeding to their Master's degree in the specialized reporting stream will be required to take five credits including a seminar in interpretative reporting, described in the course list under Journalism 28.444*, and omitting Journalism 28.301 and 28.499. Arrangements will be made for apprenticeship assignments to supplement such practical experience as graduate students may already possess. Please note the foregoing reference to proficiency in typewriting, and the paragraph relating to academic standing and grades. A grade of C- or higher must be obtained in each of the courses required in the one-year Bachelor of Journalism program for graduates.

Classes of Honours

The grade point system by which standing is expressed is outlined on p. 37.

The class of Honours degree for the one-year program students will be calculated as follows:

1. The Honours average will be normally calculated on the basis of a weighting system which provides a weight of two for Journalism 28.441* and 28.442*, one for each pair of half-courses listed in the program and one for 28.499, that is, the marks for these courses will be

multiplied by the appropriate weight and the total divided by seven.

2. Students admitted to the one-year program will be notified of the value that has been applied to their overall previous academic work and this value will be included in the calculation of the overall average as if it represented the first three years of university work at Carleton.

Courses Offered

Courses offered by the School of Journalism are listed under "Journalism" in alphabetical order with all courses offered by the Faculty of Arts. See p. 115.

Department of Art History

Officers of Instruction

Chairman

C. Malcolm Brown

Supervisor of Honours Studies

D. Goodreau

Professor

G. Swinton

Associate Professors

C. Malcolm Brown

David Burnett

Assistant Professors

D. le Berrurier

D. Goodreau

M. Sykes

Adjunct Professor

R.H. Hubbard (*National Gallery of Canada*)

Sessional Lecturer and Slide Curator in Art History

G.M. Scott

General Information

The Department's offerings range from beginning survey courses to advanced courses leading to the Bachelor of Arts Major and Honours degrees as well as a Master of Arts program in Canadian Art, offered through the Institute of Canadian Studies.

Students who wish to pursue programs in museum training on the post-graduate level are advised that courses in general chemistry are strongly recommended.

Courses Open to First Year Students

The following courses are open to First year students:
Art History 11.100, 11.105, 11.110, 11.210, 11.220*, 11.230*, 11.240*, 11.250*, 11.260*.

Major Programs

Major in Art History

Major in Art History consists of six full-course credits in Art History, courses which must be chosen in consultation with members of the Department. Credit gained from Art History 11.100 and 11.105 will not count as part of the minimum specific requirements for a Major or Honours in Art History. The following basic "core" courses are normally taken in the First and Second years:

Art History 11.210, 11.220*, 11.230*, 11.240*, 11.250*, 11.260*.

In most cases there are more specialized courses at the 300 level, following upon these basic courses. The normal sequence of courses for a Major is six half-course credits at the 200 level and three full-course credits at the 300 level. In order to achieve a balanced program of study, not more than two of the required three full-course credits at the 300 level shall be taken in any one of the following general areas:

- (a) European art before 1600 A.D.;
- (b) European art after 1600 A.D.;
- (c) Art of North America.

Students going into their Third year, wishing to register for 300-level courses without having had the prerequisite 200-level preparatory course, are advised that admission is conditional upon the permission of the instructor.

Combined Majors

For Major students combining Art History with another subject, the general rule is that they must include at least four full-course credits in Art History, of which one must be at the 300 level.

Honours Programs

Honours in Art History

The Honours program comprises twenty full-course credits after Grade 13, of which a minimum of nine full-course credits must be in Art History.

1. For the First, Second and Third year programs refer above to the course pattern outlined in the section *Major in Art History*.

2. Honours students must take at least three full-course credits in Art History at the 400 level. In order to achieve a balanced program of study, not more than two of the required three full-course credits shall be taken in any one of the following general areas:

- (a) European art before 1600 A.D.;
- (b) European art after 1600 A.D.;
- (c) Art of North America.

3. Students will be required to demonstrate a proficient reading knowledge of either French, German, Italian, or another language if relevant to their program. The written examination may be waived if the student has attained a grade of B- or higher in a 100-level course in the language. If graduate study is contemplated, a second language is strongly recommended. Normally, graduate programs in Art History require reading proficiency in French and German and in a third language for the doctoral level.

4. The prerequisite for all 400-level courses is Fourth year Honours standing or permission of the Department.

Combined Honours

For Honours programs combining Art History with another subject, the minimum requirement is seven full-course credits in Art History chosen in consultation with the Department, and must include two full-course Art History credits at the 400 level.

Courses Offered

Art History 11.100

A Survey of the History of European Art

This course is designed as an Arts option for students of other faculties and for liberal arts students other than Art History Majors. Credit gained from this course will not count as part of the minimum specific requirements for a Major or Honours in Art History. Emphasis will be placed on the analysis of European painting, sculpture and architecture from prehistory to the present in order to explain problems and attitudes typical of major periods.

Evening division: Lectures three hours a week.

G. Scott

Art History 11.105

A Survey of Canadian and American Art

This course is designed as an Arts option for students of other faculties and for liberal arts students other than Art History Majors. Credit gained from this course will not count as part of the minimum specific requirements for a Major or Honours in Art History. This course will examine aspects of painting, sculpture, architecture and decorative arts in North America from the beginning of the European settlement to the present.

Evening division: Lectures three hours a week.

M. Sykes

Art History 11.110

An Introduction to Architectural History

This course is designed both for Art History Majors and for liberal arts students. The architectural history of Europe and North America will be outlined through a discussion of the major stylistic periods and monuments. The relationship between structure, function and form in architecture will be emphasized.

Not offered 1977-78.

Art History 11.210

Classical Art and Archaeology

Offered in the Department of Classics as Classical Civilization 13.230.

Art History 11.220*

Western Medieval Art

The development of Western medieval art from the earliest Christian productions through the late Gothic period will be studied, with some reference to Eastern medieval art for purposes of comparison.

Evening division, First term: Lectures three hours a week.

D. le Berrurier

Art History 11.230*

Renaissance Art

This course is designed to survey painting, sculpture and architecture in Italy and in Northern Europe from the fourteenth century through the first quarter of the sixteenth century.

Day division, First term: Lectures three hours a week.

G. Scott

Art History 11.240*

Mannerist and Baroque Art

This course is designed to survey painting, sculpture and architecture in Europe from the second quarter of the sixteenth century through the seventeenth century.

Day division, First term: Lectures three hours a week.

Art History 11.250*

Rococo and Romantic Art

This course will study the development of the Rococo style in France, Italy and England, and will investigate the emergence and development of Romanticism with emphasis given to painting in France.

Day division, Second term: Lectures three hours a week.

D. Goodreau

Art History 11.260*

Modern Art

This introductory course to European and North American art of the late nineteenth and the twentieth centuries will emphasize the major artistic personalities of the period.

Day division, First term: Lectures three hours a week.

D. Burnett

Art History 11.300*

Canadian Painting

This course will study selected problems in Canadian painting. The particular problems and personalities will be determined by the instructor.

Prerequisite: One full-course credit in Art History or permission of the instructor.

Day division, Second term: Lectures three hours a week.

M. Sykes

Art History 11.305*

Canadian Architecture

This course will study selected problems in Canadian architectural history. The particular problems and personalities will be determined by the instructor.

Prerequisite: One full-course credit in Art History or permission of the instructor.

Day division, First term: Lectures three hours a week.

M. Sykes

Art History 11.307*

Image and Form

The cross-cultural and cross-temporal formal analysis of art as visual language will be studied. Emphasis will be given to the evolution and the universality of some non-Western art forms and their relevance to Western art, especially since Impressionism.

Prerequisite: One full-course credit in Art History or permission of the instructor.

Not offered 1977-78.

Art History 11.310*

Etruscan and Roman Art

This course will study Etruscan art and the development of Roman art and architecture through the Constantinian period.

Prerequisite: Art History 11.210 or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. le Berrurier

Art History 11.320*

Byzantine Art

This course will examine the sources and the development of the arts in the Byzantine Empire as well as the influence of these artistic productions on those of neighbouring countries and Western Europe.

Prerequisite: Art History 11.220* or permission of the instructor.

Day division, Second term: Lectures three hours a week.

D. le Berrurier

Art History 11.327

Gothic Art

The development of Gothic art in Northern and Southern Europe from its origins in the twelfth century through the fifteenth century will be investigated.

Prerequisite: Art History 11.220* or permission of the instructor.

Not offered 1977-78.

Art History 11.330*

Florentine Renaissance Art: Masaccio through Raphael

This course will examine Florentine art in its development from late Trecento ideas to the emergence of the High Renaissance vocabulary.

Prerequisite: Art History 11.230* or permission of the instructor.

Not offered 1977-78.

Art History 11.335*

Northern Renaissance Art: Van Eyck through Dürer

This course will examine the development of Flemish and German Renaissance art.

Prerequisite: Art History 11.230* or permission of the instructor.

Day division, Second term: Lectures three hours a week.

C.M. Brown

Art History 11.340*

Studies in Baroque Art

This course will examine selected topics of seventeenth-century art and architecture including Baroque altarpiece and tomb sculpture, political and religious propaganda as reflected in palace and church decoration, and the Baroque as an international phenomenon.

Prerequisite: Art History 11.240* or permission of the instructor.

Evening division, Second term: Lectures three hours a week.

Art History 11.350*

British Art and Architecture

Art and architecture in Britain from the early sixteenth to the mid-nineteenth century will be studied.

Prerequisite: Art History 11.240* or 11.250* or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. Goodreau

Art History 11.360*

Painting in France: 1863-1906

The origins of twentieth century art will be examined through the careers of the principal Impressionist and Post-Impressionist artists: Manet, Monet, Cézanne, Seurat and Gauguin.

Prerequisite: Art History 11.260* or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. Goodreau

Art History 11.365

Art 1900-1970: Selected Topics

This course will examine in depth the art and ideas of selected groups and individual artists who have shaped the art of the twentieth century.

Prerequisite: Art History 11.260* or permission of the instructor.

Not offered 1977-78.

Art History 11.370*

Art Historical Problems

This seminar allows Art History Majors to pursue intensively such problems as iconography, attribution, bibliography, restoration, forgery, materials and media.

Prerequisite: Permission of the instructor.

Day division, First term: Lectures three hours a week.

Art History 11.399*

Museum Studies

This course will examine through study of the actual art object the content of paintings, sculptures and other objects of art, and the methods used in connoisseurship, together with some consideration of materials and techniques, and the history of museums and collecting. Enrolment limited.

Prerequisite: One full-course credit in Art History and permission of the Department.

Day division, Second term: Lectures three hours a week.

■ Fourth Year Course Prerequisites

The prerequisite for all 400-level courses is Fourth year Honours standing or permission of the Department.

Art History 11.400*

Canadian Artists and Architects

This seminar course will focus attention on the work of selected Canadian artists and architects.

Prerequisite: Art History 11.300* or 11.305* or permission of the instructor.

Day division, Second term: Three hours a week.

M. Sykes

Art History 11.407*

Prehistoric Art of the Canadian Arctic

This half course will study the art forms of the Canadian Arctic during the past 3000 years, and will examine and compare archaeological data and art forms of Siberia, Alaska and Greenland in relation to regional and local Canadian developments.

Prerequisite: Art History 11.307* or 11.408* or Anthropology 54.318* or permission of the instructor.

Not offered 1977-78.

Art History 11.408*

Contemporary Inuit Art in the Context of Art History

This course will investigate the development of Inuit art since the beginning of the nineteenth century, with emphasis given to regional and local stylistic characteristics and the works of individual artists.

Prerequisite: Art History 11.307* or 11.407* or Anthropology 54.319* or permission of the instructor.

Not offered 1977-78.

Art History 11.420*

Early Christian and Byzantine Manuscript Illustration

This seminar will study the origins of the codex illustrations and will concentrate on the development of religious and secular manuscripts from the fourth century through the fifteenth century.

Prerequisite: Art History 11.320* or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. le Berrurier.

Art History 11.425*

Byzantine and Russian Icon Painting

This seminar course will focus on the origins and development of Byzantine and Russian icon painting through the sixteenth century.

Prerequisite: Art History 11.320* or 11.325* or permission of the instructor.

Not offered 1977-78.

Art History 11.427*

Carolingian Art

This course will focus on the sources and the characteristics of the Carolingian Revival. Special emphasis will be given to manuscript illustration.

Prerequisite: Art History 11.220* or 11.310* or permission of the instructor.

Day division, Second term: Lectures three hours a week.

D. le Berrurier

Art History 11.435*

North Italian Art of the Renaissance

This course will explore the contributions made to the Renaissance vocabulary by artists from Ferrara, Verona, Venice and Padua and, accordingly, will focus on the careers of Pisanello, the Bellini, Mantegna, Tura and Cossa.

Prerequisite: Art History 11.330* or permission of the instructor.

Not offered 1977-78.

Art History 11.440*

Critical Studies in Baroque Drawings

This seminar, using in part original examples from the National Gallery of Canada, will examine the development of style and means of expression in drawing in seventeenth-century Italy, with special attention given to drawing in Rome. Enrolment limited.

Prerequisite: Art History 11.340* or permission of the instructor.

Day division, First term: Lectures three hours a week.

Art History 11.450*

Painting in Britain: Hogarth to Turner

This seminar will examine selected aspects of the rise and development of the British school of painting in the eighteenth and early nineteenth century.

Prerequisite: Art History 11.350* or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. Goodreau

Art History 11.452*

Goya: Painter and Printmaker

This course will examine the style and imagery of Goya's paintings and graphics, as well as the range of attitudes and opinions that critics and art historians have held about Goya's work.

Prerequisite: Art History 11.250* or permission of the instructor.

Evening division, Second term: Lectures three hours a week.

D. Goodreau

Art History 11.460*

Twentieth Century Art Theory and Criticism

In this course the place of the critic and of the artist as theorist will be examined in relation to the painting and sculpture of the twentieth century.

Prerequisite: Art History 11.260* or 11.365 or permission of the instructor.

Day division, First term: Lectures three hours a week.

D. Burnett

Art History 11.465*

Paul Klee and German Expressionism

The art and ideas of Paul Klee will be discussed within the context of the German Expressionist movement.

Prerequisite: Art History 11.260* or 11.365 or permission of the instructor.

Not offered 1977-78.

Art History 11.470*

Historical Studies in Drawing

The history of the drawing as a work of art from the fifteenth century to the present will be studied in this seminar, using in large part original examples from the National Gallery of Canada. Emphasis will be placed on the expressive possibilities of the various media and on connoisseurship. Enrolment limited.

Prerequisite: Permission of the instructor.

Day division, First term: Lectures three hours a week.

Art History 11.480*

Secular Iconography: Pagan Themes in Western Art

This course will analyze and categorize the various ways in which Greco-Roman themes were used in Medieval, Renaissance and Baroque art.

Prerequisite: Permission of the instructor.

Day division, Second term: Lectures three hours a week.

C. M. Brown

Art History 11.485*

Religious Iconography: Biblical Themes in Western Art

This course will explore the textual and the visual traditions underlying selected Old and New Testament themes in Medieval, Renaissance and Baroque art.

Day division, First term: Three hours a week.

C.M. Brown

Art History 11.499

Honours Research Essay

This course, designed for independent research under the supervision of a member of the Department, is open to those students with B+ standing in their Art History courses. An essay of approximately 10,000 words is the usual assignment. A written project outline, approved by the supervisor, must be submitted to the Honours supervisor by the last day for course changes.

Prerequisite: Permission of the Department.

Day and evening divisions.

Members of the Department

Officers of Instruction

Chairman

D. G. Beer

Professor

A. Trevor Hodge

Associate Professors

R.C. Blockley

A.S. Fotiou

T.R. Robinson

M.E. Welsh

Assistant Professors

D.G. Beer

R.L. Jeffreys (*St. Patrick's College*)

General Information

The discipline of Classics is divided into three main fields: Latin, Greek, and Classical Civilization. By "Latin" and "Greek" are meant works of Latin and Greek literature studied in the original tongue, not in translation; "Classical Civilization" covers all non-linguistic studies in classical antiquity, such as ancient history and literature in translation.

Honours and Major programs exist in Latin alone and Greek alone, and in Classical Civilization alone. Combined Honours and Combined Major programs are available in a combination of any two of the three fields, i.e., Latin and Greek, Latin and Classical Civilization, Greek and Classical Civilization.

Combined Honours and Combined Major programs can also be arranged combining any of the three with work in another Department (for example, Religion and Classical Civilization; Latin and French) upon consultation with the department chairmen concerned.

Major Programs

Major in Greek

Five Greek courses and Classical Civilization 13.290.

Major in Latin

Five Latin courses and Classical Civilization 13.291.

Major in Classical Civilization

Six full Classical Civilization courses and Latin or Greek at the 015 level.

Combined Majors

Greek and Classical Civilization

Four Greek courses and four Classical Civilization courses.

Latin and Classical Civilization

Four Latin courses and four Classical Civilization courses.

Greek and Latin

Four Greek courses and four Latin courses.

Combined Major with Another Department

Combined Majors can be arranged with other departments. In addition to the requirements of the other Department (for which the student should consult its chairman), one of the following will be required:

Greek:

Four Greek courses and Classical Civilization 13.290.

Latin:

Four Latin courses and Classical Civilization 13.291.

Classical Civilization:

Four Classical Civilization courses.

Classical Civilization (Ancient History) and History:

Four Classical Civilization (Ancient History) courses: 13.290, 13.291 and two of 13.301, 13.302, 13.303.

Or, instead, three of the above Classical Civilization (Ancient History) courses and one of the following: Classical Civilization 13.100 (for which 13.102* and 13.103* may be substituted), 13.231, 13.235, 13.320, 13.342.

Students should consult the History Department for the History component of the program.

All courses are to be chosen in consultation with the Department.

Honours Programs

Honours in Greek

Seven Greek courses and Classical Civilization 13.290.

Honours in Latin

Seven Latin courses and Classical Civilization 13.291.

Honours in Classical Civilization

Nine full Classical Civilization courses and Greek 15.100 or Latin 16.100 and the other language at the 015 level.

Classical Civilization courses to be chosen as follows: 13.100 or 13.102* and 13.103*; two of the following courses at the 200 level: 13.209, 13.290, 13.291; two full courses at the 300 level; either 13.428 or 13.429; three options.

Combined Honours

Greek and Classical Civilization

Seven Greek courses, four Classical Civilization courses and Latin 16.015 or 16.100.

Latin and Classical Civilization

Seven Latin courses, four Classical Civilization courses and Greek 15.015 or 15.100.

Greek and Latin

A minimum of twelve courses out of twenty is required. These may be built up in various combinations to produce differing degrees of emphasis on the two languages. Acceptable combinations are:

Six Greek courses and six Latin courses;
Seven Greek courses and five Latin courses;
Five Greek courses and seven Latin courses;
Five Greek courses, five Latin courses and two Classical Civilization courses.

Combined Honours with Another Department

Combined Honours can be arranged with other Departments. In addition to the requirements of the other Department (for which the student should consult its chairman), one of the following will normally be required:

Greek:

Six Greek courses and Classical Civilization 13.290.

Latin:

Six Latin courses and Classical Civilization 13.291.

Classical Civilization:

Six Classical Civilization courses including either Classical Civilization 13.428 or 13.429.

Classical Civilization (Ancient History) and History

Six Classical Civilization (Ancient History) courses: 13.290, 13.291, 13.301, 13.302, 13.303, 13.429.

Or, instead, five of the above Classical Civilization (Ancient History) courses, one of which must be 13.429, and one of the following: 13.100 (for which 13.102* and 13.103* may be substituted), 13.231, 13.235, 13.320, 13.342.

Student should consult the History Department for the History component of the program.

Note: In all the above prescriptions, Major and Honours, unless stated otherwise the term "Greek courses" and "Latin courses" should be understood to refer to courses at the 100 level and higher. Students with no previous knowledge of the language will need to take in addition Greek 15.015 or Latin 16.015 as a prerequisite for admission to the 100 level and this course will normally count toward their degree as one of their options.

Graduate Program

The Department of Classics offers studies leading to the degree of Master of Arts. For further details consult the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Courses Offered■ **Greek**

Greek 15.015

Introduction to Language and Reading

A beginning course to introduce students not only to grammar and syntax, but also to the reading of continuous prose.

Day division: Lectures and practice periods four hours a week.

A.T. Hodge

Greek 15.100

First Year Greek: Reading and Prose Composition

A study of the *Alcestis* of Euripides and the *Orations* of Lysias. Some time will also be devoted to prose composition.

Prerequisite: Greek 15.015 or equivalent.

Day division: Lectures three hours a week.

D.G. Beer

Greek 15.200

Second Year Greek: Literature and Sight Translation

A study of selected passages from major authors such as Homer and Thucydides, and the *Memorabilia* of Xenophon. Time will also be devoted to sight translation.

Prerequisite: Greek 15.100 or equivalent.

Day division: Lectures three hours a week.

A.T. Hodge

Greek 15.310

The Tragedians

The rise and development of tragedy in Greece; plays of Aeschylus, Sophocles and Euripides will be read.

Prerequisite: Greek 15.200 or permission of the Department.

Day division: Three tutorial hours a week.

D.G. Beer

Greek 15.330

The Philosophers

A study of the rise and development of Greek philosophy with special attention to the literary qualities of the chief authors.

Prerequisite: Greek 15.200 or permission of the Department.

Day division: Three tutorial hours a week.

A.S. Fotiou

Other Greek courses to be offered in rotation in coming years are:

Greek 15.300

The Orators

Greek 15.320

Homer

Greek 15.390
An Author in Depth

Greek 15.400
Comedy

Greek 15.410
Lyric and Elegy

■ **Latin**

Latin 16.015
Beginning Latin

A course for students with no previous knowledge of Latin and designed to introduce them not only to the grammar and syntax of the language but also to the reading of continuous prose.

Day division: Lectures and practice periods four hours a week.

R.C. Blockley

Latin 16.100

First Year Latin: Reading and Prose Composition

Selected readings from authors particularly valuable for the light they throw on Roman society, especially in the Silver Age. Time will also be devoted to prose composition.

Prerequisite: Grade 12 Latin, Latin 16.015, or equivalent.

Day division: Lectures three hours a week.

A.S. Fotiou

Latin 16.200

Second Year Latin: The Golden Age

A study of Cicero, Virgil, Livy, and Horace – the major writers of the Golden Age of Latin literature. Time will also be devoted to practice in sight translation.

Prerequisite: Latin 16.100 or equivalent.

Day division: Lectures three hours a week.

R.L. Jeffreys

Latin 16.310

Lyric and Elegy

Readings in Horace and the other chief authors of the genre.

Prerequisite: Latin 16.200 or permission of the Department.

Day division: Three tutorial hours a week.

M.E. Welsh

Latin 16.391

An Author in Depth

This year the author will be Tacitus.

Prerequisite: Latin 16.200 or permission of the Department.

Day division: Three tutorial hours a week.

R.C. Blockley

Other Latin courses to be offered in rotation in coming years are:

Latin 16.300
Virgil and Epic

Latin 16.320
Philosophy

Latin 16.330
Drama

Latin 16.400
The Historians

Latin 16.410
Satire

Latin 16.420
Oratory

■ **Classical Civilization**

Classical Civilization 13.100

Some Aspects of Greek and Roman Civilization

Not offered 1977-78.

Classical Civilization 13.102*

Aspects of Greek Civilization

An introduction to Greek antiquity in which the main characteristics of Classical Greece will be discussed. It is especially recommended for students of other faculties who desire an Arts option, or for Arts students whose interest is general rather than specific. There will be appropriate readings from Greek authors in translation.

Day and Evening divisions, First term: Lectures two hours a week.

In 1977-78 also offered off campus, in West Ottawa. Location to be announced.

R.L. Jeffreys, M.E. Welsh

Classical Civilization 13.103*

Aspects of Roman Civilization

An introduction to Ancient Rome in which the main characteristics of Roman civilization will be discussed. It is especially recommended for students of other faculties who desire an Arts option, or for Arts students whose interest is general rather than specific. There will be appropriate readings from Latin authors in translation.

Day and Evening divisions, Second term: Lectures two hours a week.

In 1977-78 also offered off campus, in West Ottawa. Location to be announced.

R.L. Jeffreys, M.E. Welsh

Classical Civilization 13.202

History of Comedy and Satire

Not offered 1977-78.

Classical Civilization 13.209

Greek and Roman Literary Genres

A study through English translation of the various genres of Greek and Latin literature, especially those which influenced later European writings: epic, drama, the ode, pastoral poetry, satire. (Also listed as English 18.209.)

Day division: Lectures two hours a week.

D.G. Beer

Classical Civilization 13.230

Classical Art and Archaeology

A study of the material remains of the ancient world from Minoan Crete and early Greece to the Roman Empire, with special attention to pottery, sculpture, painting and architecture. (Also listed as Art History 11.210.)

Day division: Lectures two hours a week.

A.T. Hodge

Classical Civilization 13.231

Methods and Techniques of Archaeology

The interrelation of archaeology and anthropology, history, classics, art history, etc. Techniques of field archaeology such as stratigraphy, air photography, surveying, Carbon 14, typology and seriation, underwater archaeology, laboratory analysis: and the organization and administration of a major excavation.

Evening division: Lectures two hours a week.

R.E. Morlan

Classical Civilization 13.235

Ancient Science and Technology

The development of science and technology in the ancient world and their practical application in such fields as ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine: the position of the craftsman and artisan in society, the attitude of the intellectuals to science and manual labour, and the effect upon technological development of the institution of slavery. This course is suitable for students with no previous knowledge of Greece or Rome.

Evening division: Lectures two hours a week.

A.T. Hodge

Classical Civilization 13.240

Greek Philosophy

Offered in the Department of Philosophy as Philosophy 32.205.

Classical Civilization (Ancient History) 13.290

History of Ancient Greece: the Classical Period

The history of Classical Greece from the Persian Wars to the conquest of Asia by Alexander the Great. Particular attention will be paid to the age of Pericles. (Also listed as History 24.290.) It is particularly intended for Majors and Honours students in Classics and History or for other students who wish to study in depth and detail the core period of Classical Greece.

Evening division: Lectures two hours a week.

A.S. Fotiou

Classical Civilization (Ancient History) 13.291

History of Ancient Rome: Late Republic-Early Empire 133 B.C.-96 A.D.

A study of the events, processes and conditions which led to the fall of the Republic, the establishment of the Principate of Augustus and the development of imperial policies under the Julio-Claudians and Flavians to the death of Domitian. (Also listed as History 24.291.) It is particularly intended for Majors and Honours students in Classics and History or for other students who wish to study in depth and detail the core period of Classical Rome.

Day division: Lectures two hours a week.

R.L. Jeffreys

Classical Civilization 13.300

Classical Mythology

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There will be some discussion of classical myths in terms of contemporary interpretations of myth. (All texts used will be in English.)

Day division: Lectures two hours a week.

M.E. Welsh

Classical Civilization (Ancient History) 13.301

The Hellenistic Age 323-31 B.C.

Not offered 1977-78.

Classical Civilization (Ancient History) 13.302

Late Roman History: Fourth and Fifth Centuries A.D.

Not offered 1977-78.

Classical Civilization (Ancient History) 13.303

History of the Byzantine Empire 527-1453 A.D.

The history of the Byzantine Empire from Justinian the Great in the sixth century A.D. to the fall of Constantinople in 1453 A.D. Special attention will be given to the cultural, intellectual and institutional developments of Byzantium and their impact on the Slavic, Western European and Islamic countries.

Day division: Lectures two hours a week.

A.S. Fotiou

Classical Civilization 13.305

Sites and Civilization

(Summer only)

Not offered Summer 1977.

Classical Civilization 13.310

Greek Literature in Translation

Not offered 1977-78.

Classical Civilization 13.311

Latin Literature in Translation

Not offered 1977-78.

Classical Civilization 13.312

Greek and Roman Drama

A study in translation of Greek and Roman tragedy and comedy; the origins, character and development of the ancient theatre. Plays by the following authors will be discussed: Aeschylus; Sophocles; Euripides; Aristophanes; Menander; Plautus; Terence; Seneca.

Day division: Lectures and discussions two hours a week.

Offered 1977-78 at St. Patrick's College.

D.G. Beer

Classical Civilization 13.315

Epic and Novel in Ancient Greece and Rome

Not offered 1977-78.

Classical Civilization 13.320

Ancient Society

Not offered 1977-78.

Classical Civilization 13.333

Monuments of Rome

A study on the site in Italy of the principal antiquities of ancient Rome and the surrounding region, including Naples and Paestum. (Summers only.)

Not offered 1977.

Classical Civilization 13.342

Social Problems in Antiquity

Not offered 1977-78.

Classical Civilization 13.344

Women in Antiquity

A study of women in antiquity, primarily in Greece of the Classical and Hellenistic periods and in Rome of the late Republic, early Empire and the early Christian period. The course will concentrate on the role of women (and the various conceptions of that role) in society, both within and without the family; and some consideration will be given to "types" of women that appear in literature. (Also listed as History 24.304.)

Evening division: Lectures and discussions two hours a week.

Offered 1977-78 at St. Patrick's College.

R.C. Blockley

Classical Civilization 13.428

Selected Topics in Greek and Roman Literature

Special topic for 1977-78: Greek and Roman Drama. This course is intended for Honours students in Classical Civilization, who are in their Third or Fourth year.

Prerequisite: Permission of the Department.

Day division: Discussions two hours a week.

Offered 1977-78 at St. Patrick's College.

D.G. Beer

Classical Civilization 13.429

Selected Topics in Greek and Roman History

Also listed as History 24.429 and intended for Honours students in History and in Classics who should normally be in their Third or Fourth year. Special topic for 1977-78: The Later Roman Empire.

Prerequisite: Permission of the Department.

Day division: Seminar two hours a week.

R.C. Blockley

Courses Offered at St. Patrick's College*Classics*

13.102* Aspects of Greek Civilization

13.103* Aspects of Roman Civilization

13.312 Greek and Roman Drama

13.344 Women in Antiquity

13.428 Selected Topics in Greek and Roman Literature

Courses Planned for Summer School and Evening Division 1977-81*Summer 1977*

Classical Civilization 13.100, 13.291

Evening 1977-78

Classical Civilization 13.102*, 13.103*, 13.231, 13.235, 13.290, 13.344

Summer 1978

Greek 15.015, Classical Civilization 13.100, 13.209, 13.290, 13.305 or 13.333

Evening 1978-79

Classical Civilization 13.102*, 13.103*, 13.230, 13.231, 13.291

Summer 1979-80

Latin 16.015, Classical Civilization 13.100, 13.291

Evening 1980-81

Classical Civilization 13.102*, 13.103*, 13.231, 13.235, 13.290

Comparative Literature

Members of the Committee

Chairman

C.A. Marsden (*Comparative Literature and Spanish*)

Members

G.R. Barratt (*Russian*)

M. Ciavolella (*Italian*)

A. Elbaz (*French*)

W. Krynski (*Comparative Literature*)

Eva Kushner (*Comparative Literature*)

P. Laurette (*French*)

H.-G. Ruprecht (*Comparative Literature*)

S. Sarkany (*French*)

J.M. Thompson (*Philosophy*)

G. Wood (*English*)

G.A. Woods (*Comparative Literature*)

Associate Members

D.G. Beer (*Classics*)

C.M. Brown (*Art History*)

V.K. Chari (*English*)

T.H. Coulson (*English*)

J. Dallett (*German*)

C.P. Fleischauer (*French*)

J. Goheen (*German*)

J.J. Healy (*English*)

E.F. Kaye (*French*)

C. Levenson (*English*)

G. Melnikov (*Russian*)

B. Mogridge (*German*)

K. O'Donnell (*English*)

R.M. Polzen (*Religion*)

J.S. Tassie (*French*)

P. van Rutten (*French*)

P. Varnai (*Russian*)

F.B. Westburg-Gildenhuis (*English*)

Student Representatives

General Information

The Comparative Literature Committee offers a program of graduate study leading to the degree of Master of Arts. While the Committee makes available some of its courses as options for qualified undergraduates and graduates who are registered in other disciplines and are appreciative of the broader perspectives offered by Comparative Literature, its main purpose is to provide courses for graduate students wishing to specialize in Comparative Literature.

The purpose of the Comparative Literature program is to study literature in its international context, and to relate and compare literary phenomena usually studied in isolation because of linguistic barriers and the traditional departmental division of academic disciplines. Thus, taking into account the interrelation of all humanistic studies such as the various literatures, philosophy, psychology, sociology, the visual arts and

history, "comparatists" view literary creation within the total complex evolution of world literature. The historical flow of literary archetypes, the role of folklore and myth in literature, recurrent problems of literary theory and consideration of the less well known literatures of the world are some of the objects of Comparative Literature studies.

Students registered in other language departments who wish to enrol in one or more courses in the Comparative Literature program must demonstrate a reading knowledge of the languages required for each course.

Graduate Program

For complete information on admission and course requirements please consult the Graduate Studies and Research Calendar.

Courses Offered

Comparative Literature 17.361

Studies in Literary Genres

Not offered 1977-78.

Comparative Literature 17.401

Courtly Love in Medieval Literature

An examination of the phenomenon of Courtly Love through the study of romances and poems of European Literature of the Middle Ages. Translations will be used as required.

Prerequisites: One relevant European language other than English and permission of the Committee.

Evening division: Seminar three hours a week.

G.A. Woods

Comparative Literature 17.410

Critical Approaches to Literature I: Linguistic Stylistics

This course deals with poetics and the descriptive analysis of literary texts according to recent developments in linguistic stylistics. Practical work includes application of semiotics and principles of narrative grammar to literary texts.

Prerequisite: Permission of the Committee.

Seminar three hours a week.

H.-G. Ruprecht

Comparative Literature 17.420

Critical Approaches to Literature II: Historical and Aesthetic

An examination of the concept of periods, movements, trends and the various factors which may help to stimulate literary creation ('source', 'influence', 'convention', 'tradition', etc.). The changing values, standards and tastes implicit in each new period or phase of literature are related to the aesthetic approach which analyses the problems in the description, interpretation and evaluation in the light of contemporary aesthetics.

Prerequisite: Permission of the Committee.

Seminar three hours a week.

C.A. Marsden, J.M. Thompson

Comparative Literature 17.430

Critical Approaches to Literature III: Psychological Criticism

A method of analysis based on Mauryon, Laplanche, Ricoeur, Lacan and others, as well as Freud's interpretation of artistic phenomena, applied to the poetry of such writers as Brecht, Auden, Aragon, Neruda, etc.

Prerequisites: French, and preferably German or Spanish and permission of the Committee.

Seminar three hours a week.

Comparative Literature 17.440

Critical Approaches to Literature IV: Sociology of Literature

Topic for 1977-78: Cultural analysis of the modern short story. This course will examine the problem of communication through fiction. Analytical models will be developed by comparison and mapping of the structures of discourse, decoding of meanings, and assessment of their impact on culture. Works to be studied will be selected from those most publicized during the 'Turn of the Century'.

Prerequisites: Preferably French and one other relevant language, and permission of the Committee.

Seminar three hours a week.

S. Sarkany

Department of English Language and Literature

Officers of Instruction

Chairman

James Steele

Co-ordinator, St. Patrick's College

M. Ryan

Professor Emeritus

L.A. Cormican (*St. Patrick's College*)

Professors

A.M. Beattie

V.K. Chari

James Downey

Michael Gnarowski

B.W. Jones

G.B. Johnston

R.L. McDougall

A.T. Tolley

G.J. Wood

Visiting Professors

Patrick Cruttwell

A.W. Trueman

Associate Professors

M.I. Cameron

Douglas Campbell

T.H. Coulson

M.J. Edwards

Barbara Garner

Maureen Gunn

Charles Haines

J.J. Healy

T.J. Henighan

R.G. Laird

R.B. Lovejoy

R.H. MacDonald

Lindsay Mann

R.D. Mathews

A.D. McLay

T.J. Middlebro'

J.R. Morrison (*St. Patrick's College*)

Kathleen O'Donnell (*St. Patrick's College*)

Ian Pringle

S.C. Russell (*St. Patrick's College*)

R.B. Rutland

M. Ryan (*St. Patrick's College*)

James Steele

Alistair Tilson

James Wilcox

Douglas Wurtele

Lorna D. Young

Assistant Professors

D.A. Beecher

Parker Duchemin

Faith Gildenhuys

A.W. Heidemann

R.L. Hogg

Barbara Lecker

Christopher Levenson

A.A. MacKinnon (*St. Patrick's College*)

Lawrence McDonald

George McKnight

T. Nollet (*St. Patrick's College*)

J. Noonan (*St. Patrick's College*)

Enoch Padolsky

Michael Thompson

Sessional Lecturers

Gretl Fischer

Sonia Tilson

Mary Wilson

Anna Wurtele

Major Programs

Every student who elects English as a Major subject must have his or her program approved by a member of the Department. The Major in English consists of a minimum of six courses in English, as follows:

1. a First-year course in English, preferably English 18.162;
2. English 18.232 in the Second year;
3. four additional courses in English which must include 18.242 or 18.352 (both may be taken if desired). English 18.268 and English 18.298 may not be counted towards the Major.

With the approval of the Department, a student may arrange in special cases a course program which would allow alternatives to 18.232, to 18.242 and to 18.352. In order to continue in the Major or Honours program, a student must attain a grade-point average of 4.0 or better in the First-year course in English. A grade-point average of at least 4.0 must be maintained thereafter in English courses.

A combined Major in English and another subject will include at least five courses in English. English 18.232 is required, along with either 18.242 or 18.352 (or in special cases approved alternatives). Both departments must approve a combined program.

Honours Programs

All students who meet the general University Honours requirements, and who have at least second-class standing in English, will be admitted to, and permitted to continue in, the Honours program. Students with third-class standing in English will be given individual consideration on application to the Department. An Honours student must have his or her program approved at registration by a departmental adviser. The Honours program consists of twenty courses after Grade 13 (twenty-five after Grade 12), of which eleven must be in English, including the following:

1. A First-year course in English, preferably English 18.162;
2. English 18.232, 18.242 and 18.352;
3. a course in English literature to 1500 or English language or English linguistics;
4. a course in Shakespeare;
5. a course in Canadian literature.

Of the eleven courses at least three must be chosen from courses at the 300 or 400 level designated by the Department as seminar courses or courses of independent study. English 18.209 (also listed as Classical Civilization 13.209) will be counted as one of the eleven courses required for the Honours degree.

With the approval of the Department, a student may arrange in special cases a course program which allows alternatives to English 18.232, 18.242 and 18.352.

Combined Honours

Combined Honours programs may be arranged. Six courses in English are usually required, including:

1. a First-year course in English, preferably English 18.162;
2. English 18.232;
3. either English 18.242 or 18.352.

Students may take both English 18.242 and 18.352. Of the six courses at least two must be chosen from courses at the 300 or 400 level designated by the Department as seminar courses or courses of independent study.

Combined Honours, English and Journalism

A Combined Honours program may be arranged in English and Journalism. Six courses in English are usually required, including:

1. A First-year course in English, preferably English 18.162;
2. English 18.232;
3. English 18.242 or 18.352 (both may be taken); and two courses chosen at the 300 or 400 level from among those designated by the Department as seminar courses or courses of independent study.

Should the student decide to take the special Honours project in the Fourth year in the School of Journalism, he or she would be required to do Journalism 28.498. In this case, the student would receive a Bachelor of Journalism degree, Combined Honours Journalism and English. Should the student decide to do the Fourth-year project in the Department of English, he or she would take English 18.498. In this case, the student would receive a Bachelor of Arts degree, Combined Honours English and Journalism.

Qualifying University Year

Students in Qualifying University year who wish to take an English course must take English 18.010 to fulfill the requirements for Qualifying University year. They may in addition take one English course at the First-year level.

Note: English 18.010 will be counted as a university credit for those students who qualify for Accelerated Progress (p. 26) but will not be counted towards the Major or Honours requirements in English.

First Year

A maximum of two English courses at the First-year level may be taken.

Graduate Program

The Department of English offers courses of study leading to the degree of Master of Arts. Students may choose a program consisting of course work and thesis or one consisting entirely of course work. For further details consult the Graduate Studies and Research Calendar and the Department's *Handbook of Advice for Graduate Students in English*.

Film Course and Creative Writing Course

The film course (English 18.268) and the creative writing course (English 18.298) offered in the Department of English carry credit towards the total requirements for the Major and Honours degree and may be counted among the minimum eleven-course requirements of the Honours program. They cannot, however, be counted among the minimum six-course requirements of the Major program.

Reading Lists and Advice

Detailed reading lists and a *Handbook of Advice for English Major and Honours Students* will be available from the Department of English (1812 Arts Tower) after April 14. The *Handbook* will contain a summary description of upper-year courses.

St. Patrick's Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Courses Offered

English 18.010

The Study of Literature

A study of selected plays, poems, short stories, essays, and novels. Essay writing is required.

Note: Students not enrolled in Qualifying University year will *not* receive credit for this course.

Day division: Lectures four hours a week.

C. Levenson (co-ordinator)

English 18.100

English Authors from Chaucer to T.S. Eliot

A study of significant works of English literature, presented as a general historical survey from the fourteenth to the twentieth centuries. In 1977-78 authors to be studied will include Chaucer, Marlowe, Shakespeare, Donne, Milton, Pope, Swift, Fielding, Keats, Wordsworth, Browning, Dickens, Tennyson, Yeats, Eliot.

Prerequisite: First-year standing.

Day and Evening divisions: Three hours a week. In 1977-78 also offered off campus. Location to be announced.

G. Wood (co-ordinator)

English 18.101

English and Continental Texts

A study of works by English and Continental writers. The list of authors to be read will usually include Dante, Boccaccio, Chaucer, Shakespeare, Byron, Flaubert, Tolstoy, Ibsen and O'Casey. Consult the instructor or the Department for complete reading lists. The continental texts will be read in translation.

Prerequisite: First-year standing.

Day division: Three hours a week.

C. Haines

English 18.102

Form and Tradition

A study of fiction, poetry, and drama concentrating on the nature and development of significant literary forms. In 1977-78 the course will include novels by Defoe, Austen, Dickens, Fitzgerald and Golding, plays ranging from Sophocles to the twentieth century, and a wide selection of poetry.

Prerequisite: First-year standing.

Day division: Three hours a week.

James Wilcox (co-ordinator)

English 18.162

Twentieth-Century Literature

For Major and Honours students, in the First year. Undeclared students may also enrol. An introduction to literary study, examining the poetry, drama, and fiction of the twentieth century, in a representative selection of English, American and Canadian authors. The relation between critical ideas and literary works will be emphasized. The course may include works by Joyce,

Conrad, Woolf, Eliot, Yeats and Williams, and a selection of novels, plays, and poems.

Prerequisite: First-year standing.

Day and Evening divisions: Three hours a week, including a one-hour seminar.

In 1977-78 also offered off campus, in East Ottawa.

Location to be announced.

A.T. Tolley (co-ordinator)

English 18.204

Dramatic Genres

A study of selected plays, representing the major genres of dramatic literature. The course will serve as an introduction to the study of drama. Portions or the whole of some plays included on the course will be rehearsed and presented by the class as part of the assigned work of the course.

Prerequisite: A First-year course in English or permission of the instructor.

Not offered in 1977-78.

English 18.205

History of the Language

A course on the nature and development of the sounds, grammar and spelling of the English language, together with some study of its cultural and stylistic evolution.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Three hours a week.

G. Johnston

English 18.207

Literature and the Sciences

A course concentrating on certain points of intersection between literature and science, using texts from various periods and genres. In 1977-78 science fiction and mainstream literature will be used to explore the following themes: man in primitive or alien environments, adventures in space and time, the vision of Utopia, the threat of the machine and the bomb, the possibility of evolution toward or contact with Super-life. Writers studied will include Wells, C.S. Lewis, Teilhard de Chardin, B.F. Skinner, Frank Herbert, T.S. Eliot and many others.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

T.J. Henighan

English 18.208

Myth and Symbol

A study of myth and its appearance in literature. The main purpose of the course will be to describe archetypal patterns in literature, to trace these same patterns as they appear in myth, and to show how they relate to the form, substance and effect of the literary work.

Prerequisite: A First-year course in English or permission of the instructor.

Day and Evening divisions: Lectures three hours a week.

Robin MacDonald (day), Anna Wurtele (evening)

English 18.209

Greek and Latin Literary Genres

A study through English translations of the various genres of Greek and Latin literature, especially those which influenced later European writing: epic, drama, the ode, pastoral poetry, satire. Offered in the Department of Classics as Classical Civilization 13.209.

Prerequisite: English 18.010 or equivalent.

Day division: Lectures two hours a week.

D. Beer

English 18.212

Old English

A study of Old English language and literature, including grammar and phonology, and translation of selections of Old English prose and poetry.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Two hours a week.

G. Johnston

English 18.222

Introduction to Middle English

An introductory study of Middle English language and literature.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures and seminar three hours a week.

G. Johnston

English 18.232

English Studies I

The required course for Second-year Honours and Major students. A selected group of major authors from Chaucer to Milton will be studied intensively, and their intellectual and artistic relationships emphasized.

Prerequisite: A First-year course in English or permission.

Day and Evening divisions: Lectures and seminar four hours a week.

A. McLay (co-ordinator)

English 18.234

Drama in England until 1642

A study of the development of dramatic production and literature from the middle ages to the closing of the theatres in 1642. Reading of representative plays, excluding Shakespeare.

Prerequisite: A First-year course in English or permission of the instructor.

Not offered 1977-78.

English 18.236

Shakespeare

A study of Shakespeare's environment and development as a dramatist, with reading of a selection of his plays.

Prerequisite: A First-year course in English or permission of the instructor.

Day and Evening divisions: Three hours a week.

M. Gunn (co-ordinator)

English 18.242

English Studies II

A required course for Honours students in their Second year. Major students and Combined Major and Combined Honours students must take either this course or English 18.352, and may take both. The course covers the literature of the Restoration and the eighteenth century. Major authors to be studied will generally include Dryden, Pope, Fielding, Johnson and Blake.

Prerequisite: A First-year course in English.

Day and Evening divisions: Lectures and seminar three hours a week.

R. Lovejoy (co-ordinator)

English 18.253

The Novel from Dickens to Conrad

A study of the English novel from the High Victorian period of Dickens, Thackeray, and Eliot to World War I.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

A.A. MacKinnon

English 18.265

Linguistics and Style

A study of some of the important theoretical writings on style along with a detailed analysis of the style of a particular poet or writer.

Prerequisite: A First-year course in English or permission of the instructor.

Not offered 1977-78.

English 18.268

Forms and Conventions of the Cinema

This course will examine some of the cinema's characteristic forms and structures, and their stylistic and thematic conventions. The course will emphasize the need to discover a critical idiom suited to the description, analysis and evaluation of film. No practical film-making is involved. (Also listed as Film Studies 19.268.)

Prerequisite: Film Studies 100; or a First-year course in literature and permission.

Enrolment: 60.

Lecture and discussion, four hours a week.

C. Faulkner

English 18.272

Introduction to American Literature

An introduction to the major authors and traditions of American literature from the beginnings to the present.

Prerequisite: A First-year course in English or permission of the instructor.

Day and Evening divisions: Three hours a week.

S.C. Russell (day), L. Young (evening)

English 18.282

Canadian Literature

A survey of the development of Canadian literature in English from its nineteenth-century beginnings to the present.

Prerequisite: A First-year course in English or permission of the instructor.

Day and Evening divisions: Three hours a week.

R.D. Mathews (co-ordinator)

English 18.285

Structures of English

An introduction to the phonology, morphology and syntax of the English language; questions of usage and style, especially in the light of the development of the language and of the kinds of variation which occur in languages; implications for the teaching of English as a native language. (Also listed as Linguistics 29.285.)

Prerequisite: Linguistics 29.100.

I. Pringle

English 18.298

Writing Seminar

A seminar involving regular assignments in various genres, and practical criticism based on this work. In 1977-78 the course will be principally concerned with poetry and prose. Enrolment will be limited. Details may be obtained from the Department.

Prerequisites: A First-year course in English and permission of the instructor.

Day division: Seminar two hours a week.

C. Levenson, J. Jackson

English 18.300

Literary Criticism from Aristotle to the Present

A study of historical and current topics in literary criticism.

Prerequisite: English 18.232.

Day division: Seminar two hours a week.

T.H. Coulson

English 18.302

Children's Literature

An historical and critical study of children's literature. The course will introduce students to critical analysis and assessment of a number of acknowledged classics of children's literature. The organization of works studied will be generic, with myth, legend, folklore, fantasy, poetry, drama, allegory, fable, and fiction being the principal forms to be considered. A detailed reading list is available from the Department. Enrolment limited. Prerequisite: A First-year course in English or permission of the instructor.

Day and Evening divisions: Lectures and discussion three hours a week.

R.B. Lovejoy, M. Wilson

English 18.303

The English Novel

The development of the art of fiction in English literature, from its beginning in the eighteenth century, through the major Victorian novelists, to the beginning of the twentieth century.

Prerequisite: A First-year course in English or permission.

Day and Evening divisions: Lectures three hours a week.

M.B. Thompson (day), A.M. Beattie (evening)

English 18.304

Drama to the Nineteenth Century

A survey of world dramatic literature from the classical period to the end of the Romantic period, with special emphasis on a comparison of the various periods of English drama with other traditions. Certain major dramatic genres will be discussed where relevant, e.g. classical tragedy and comedy, the mystery play, the Japanese Noh drama, the Italian *commedia dell'arte*, neo-classical and romantic forms of drama of the Renaissance, the Restoration comedy of manners, sentimental drama, Romanticism, etc.

Prerequisite: A First-year course in English.

Evening division: Lectures three hours a week.

J. Noonan

English 18.322

Middle English

A study of the English language and literature between the Norman Conquest and the fifteenth century. In 1977-78 the course will be concerned with Arthurian romance concentrating on stanzaic *Morte Arthur*, alliterative *Morte Arthure* and the works of Sir Thomas Malory.

Prerequisite: English 18.232 or permission of the instructor.

Day division: Seminar two hours a week.

M. Gunn

English 18.327

Chaucer and the Allegorical Tradition

A study of the works of Chaucer and Spenser, principally *The Canterbury Tales*, and *The Faerie Queene*, together with contemporary background and current critical writings.

Prerequisite: English 18.232.

Evening division: Seminar two hours a week.

Anna Wurtele

English 18.334

Seminar in Medieval and Renaissance Drama

Study of a group of plays, with attention given to the development of dramatic form and theatrical techniques and to problems of staging. Included in the study will be the production-history of individual plays.

Not offered 1977-78.

English 18.336

Milton

An intensive study of the poetry and prose of Milton, combined with an examination of the intellectual background of his work and his age.

Prerequisite: English 18.232.

Not offered 1977-78.

English 18.337

Seventeenth-Century Literature

This course will be devoted to a study of five major writers of the seventeenth century: Donne, Herbert, Marvell, Milton, and Jonson. In addition, some other writers in prose, such as Bacon, Bunyan, Burton, Andrewes, and Browne, will be studied in less detail.

These writers represent the principal trends and aspects of the age – the Anglo-Catholic, Puritan and humanist – and the literary forms which were associated with them.

Prerequisite: English 18.232.

Day division: Seminar two hours a week.

C. Levenson

English 18.338

Sixteenth-Century Literature

An examination of various English authors of the sixteenth century, including Wyatt, Surrey, Sidney, Spenser, Donne, Jonson, and certain other writers to be selected by the instructor.

Prerequisite: English 18.232.

Not offered 1977-78.

English 18.342

Eighteenth-Century Literature

Detailed study of authors and movements of the period 1660 to 1780.

Prerequisite: English 18.242 or permission of the instructor.

Not offered 1977-78.

English 18.343

The Novel from Defoe to Scott

A study of selected novelists of the eighteenth century and earlier nineteenth century.

Prerequisite: English 18.242 or permission of the instructor.

Day division: Seminar two hours a week.

Alistair Tilson

English 18.344

Restoration and Eighteenth-Century Drama

A seminar in the development of drama in London from 1660 through the eighteenth century.

Prerequisite: English 18.242 or permission of the instructor.

Not offered 1977-78.

English 18.348

Studies in Romanticism

A detailed study of the works of Wordsworth and Coleridge. A selection of writers preceding these two major poets but also figuring in the English Romantic tradition will be studied as well, though in less detail.

Prerequisite: English 18.232, 18.242 or permission of the instructor.

Day division: Seminar two hours a week.

A. Heidemann

English 18.351

Studies in the Major Victorian Poets

A detailed examination of the poetry of Tennyson, Browning, and Arnold, with some attention to related poems of other Victorian authors.

Prerequisite: English 18.232 or permission of the instructor.

Day division: Seminar two hours a week.

R.G. Laird

English 18.352

English Studies III

A required course for Honours students. For Majors, Combined Majors and Combined Honours students, this is an alternative to English 18.242. Both courses may be taken. A selected group of nineteenth-century authors will be studied.

Prerequisite: English 18.232.

Day and Evening divisions: Lectures and seminar three hours a week.

A. Heidemann (co-ordinator)

English 18.358

Studies in Major Nineteenth-Century Thinkers

Readings in nineteenth-century prose, with particular emphasis on Carlyle, Mill, Newman, Arnold, and Ruskin.

Prerequisite: English 18.232 or permission of the instructor.

Evening division: Seminar two hours a week.

R.B. Rutland

English 18.361

Twentieth-Century Poetry

An introduction to the poetry of Great Britain and America in the twentieth century.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

M. Ryan

English 18.362

Twentieth-Century Authors

In 1977-78 the poetry, drama, and fiction of the Anglo-Irish Literary Resurgence (1880-1940), with special consideration of works by Lady Gregory, W.B. Yeats, J.M. Synge, Sean O'Casey, Bernard Shaw, and James Joyce.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

L.D. Young

English 18.363

Twentieth-Century British Fiction

A study of twentieth-century British fiction. The specific authors may vary from year to year. Consult the Department's reading lists.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

T.H. Coulson

English 18.364

Modern Drama

An examination of the significant trends that have shaped the development of modern drama from Ibsen and Strindberg to such contemporary dramatists as Beckett, Albee, and Pinter. Among the movements discussed and illustrated from relevant plays are realism, symbolism, expressionism, epic theatre, surrealism, theatre of cruelty, and theatre of the absurd.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

G.J. Wood

English 18.367

Contemporary Texts

Seminar in twentieth-century works of literature.

Not offered 1977-78.

English 18.371

Studies in American Poetry

A study in depth of approximately eleven modern and contemporary American poets; including Eliot, Williams, Olson, Duncan, Creeley, H.D., Levertov, Spicer, Dorn, Ginsberg and Lowell.

Prerequisite: English 18.272 or permission of the instructor.

Day division: Seminar two hours a week.

R.L. Hogg

English 18.373

Studies in American Fiction

A study of the development of American novel and short story writing from Washington Irving to William Faulkner, including works of Poe, Hawthorne, Melville, Twain, Crane, James, Fitzgerald, and Hemingway.

Prerequisite: English 18.272 or a course in the English novel.

Day and Evening divisions: Seminar two hours a week.

L.D. Young (day), J.R. Morrison (evening)

English 18.378

Studies in American Literature

A study of the intellectual roots of American literature and culture: Puritanism, Enlightenment, Transcendentalism.

Prerequisite: English 18.272.

Day division: Seminar two hours a week.

J.J. Healy

English 18.381

Studies in Canadian Poetry

The course will concern itself with major trends and figures from the beginning until our time. It is designed to permit students to gain some familiarity with the whole tradition of English-Canadian poetry with some comparative reference to the poetry of Quebec.

Prerequisite: English 18.282 or permission of the instructor.

Day division: Seminar two hours a week.

R. Mathews

English 18.383

Studies in Canadian Fiction

A study of selected Canadian novels and the development of Canadian fiction.

Prerequisite: English 18.282 or permission of the instructor.

Day and Evening divisions: Lectures three hours a week, seminars two hours a week.

M.J. Edwards, L. McDonald

English 18.387

Selected Topic in Canadian Literature

A seminar dealing with the development of the short story in Canada with specific reference to, and critical discussion of, major examples of the genre.

Prerequisite: English 18.282 or permission of the instructor.

Day division: Seminar two hours a week.

M. Gnarowski

English 18.398

Independent Study

Research under the supervision of a member of the Department for students in the Third year who have declared Major or Honours standing in English. Projects may be organized on an individual basis, or as a special seminar directed by a member of the Department. The course may be taken only once. In the case of the individual project, an essay of approximately 8,000 words is the usual written assignment. A written request, outlining the project, with the approval of the supervisor, must be submitted to the co-ordinator by the last day for course changes. Entry into this course, when done as an individual study, will be limited to students with a B+ average in their English courses.

Note: This course may be used to fulfill one of the seminar requirements for the Honours degree, but it cannot fulfill an area requirement or substitute for English 18.232, 18.242, or 18.352.

D. Beecher (co-ordinator)

English 18.401

Studies in Poetry

The course will be a seminar on a particular topic such as a specific genre, theme or issue concerning poetry. Details of the offering for a given year will be available from the Department or the instructor offering the course.

Prerequisite: Permission of the instructor.

Not offered 1977-78.

English 18.403

Seminar in the English Novel

A seminar for the study and discussion of the art of the novel as exemplified by major works of fiction. Study will include varieties of form and pattern, modes of narration, imagery and symbolism, realism, and naturalism. The following authors will be examined in detail: Defoe, Austen, Bronte, Dickens, James, Faulkner, Dos Passos. Some consideration will be given to the modern short story. The Evening division will study novels by Defoe, Austen, Bronte, Dickens, Eliot, James, Conrad, Lawrence, Faulkner, Dreiser, and Durrell.

Prerequisite: Honours students; others by permission of the instructor.

Day and Evening divisions: Lecture and seminar two hours a week.

J. Wilcox

English 18.411

Old English Poetry

Translation and study of the text of Beowulf and the Finnsburg Fragment.

Prerequisite: Permission of the instructor.

Not offered 1977-78.

English 18.418

Old Norse

An introductory study of the Old Norse language and literature.

Prerequisite: English 18.212 or an equivalent course in Old English, or permission of the instructor.

Day division: Seminar two hours a week.

I. Pringle

English 18.436

Seminar in Shakespeare

A seminar for Honours students, concentrating on critical and scholarly approaches to Shakespeare's work.

Prerequisite: Honours students; others by permission of the instructor.

Day division: Lectures and seminar.

I. Cameron, Barbara Garner

English 18.458

Special Studies in Nineteenth-Century Literature

A study of a special topic in nineteenth-century literature.

Prerequisite: English 18.352 and permission of the instructor.

Not offered 1977-78.

English 18.464

Modern Theatre

A theoretical and practical study of the main traditions of theatre in the twentieth century.

Prerequisites: A departmental course in drama and permission of the instructor.

Not offered 1977-78.

English 18.477

Major American Authors

A detailed examination of the thought and work of a selected group of significant American writers. In 1977-78 the course will include both poetry and prose fiction, and it will study the following authors in some depth: Poe, Dickinson, Hawthorne and Faulkner.

Prerequisite: English 18.272.

Day division: Seminar two hours a week.

V.K. Chari

English 18.483

Seminar in Canadian Fiction

A seminar on the works of selected Canadian novelists. In 1977-78, the principal authors to be studied will be H. MacLennan, M. Callaghan, and G. Roy.

Prerequisite: English 18.282 or 18.383 and permission of the instructor.

Day division: Seminar two hours a week.

K. O'Donnell

English 18.487

Special Topic in Canadian Literature

An advanced course for Majors and Honours students in English. The general field of study will be the relation between French and English Canadian literature.

Prerequisite: Permission of the instructor.

Day division: Seminar two hours a week.

R.D. Mathews

English 18.488

Studies of the Literature of the Commonwealth

An examination, selective and comparative, of the non-metropolitan literatures in English of the Commonwealth. Extended attention will be given to the development of literature in Australia and to contemporary African writing.

Prerequisite: Permission of the instructor.

Day division: Seminar two hours a week.

J.J. Healy

English 18.498

Independent Study

A course for independent research and writing, under the supervision of a member of the Department, open to students in the Fourth year of Honours with a B+ standing in their English courses. An essay of approximately 10,000 words is the usual written assignment. A written request, outlining the project, with the approval of the supervisor, must be submitted to the co-ordinator by the last day for course changes.

Note: This course may be used to fulfill one of the seminar requirements for the Honours degree, but it cannot fulfill an area requirement or substitute for English 18.232, 18.242, or 18.352. For students in Combined Honours, however, it is considered to be the equivalent of an Honours essay.

D. Beecher (co-ordinator)

English 18.499

Seminar

For Honours students in the Fourth year. The course will consider the role of literary studies in a complex system of higher education.

Not offered 1977-78.

Courses Offered at St. Patrick's College

English

18.100 English Authors from Chaucer to T.S. Eliot

18.162 Twentieth-Century Literature

18.232 English Studies I

18.236 Shakespeare

18.242 English Studies II

18.253 The Novel from Dickens to Conrad

18.272 Introduction to American Literature

18.282 Canadian Literature

18.304 Drama to the Nineteenth Century

18.352 English Studies III

18.361 Twentieth-Century Poetry

Courses Planned for Summer School and Evening Division, 1977-79

Selections from the following groups of courses will be offered as follows:

Core courses: 18.162, 18.232, 18.242, 18.352: offered each year in both Evening division, Winter session and Evening division, Summer session.

English literature before 1500, or English language or English linguistics: At least one course will be offered every other year in the Evening division, Winter session; at least one course will be offered every year in the Summer session.

Shakespeare courses: At least one course will be offered each year in the Evening division, Winter session and at least one course will be offered each year in the Summer session, alternating between Day and Evening divisions.

Courses at the 300 and 400 level designated as seminar courses: At least one course will be offered in each of: Evening division, Winter session; Day division, Summer session; Evening division, Summer session.

At least one course in each of the following areas will be offered each year in both Evening division, Winter session, and Summer session:

1. *Canadian literature;*
2. *A First-year course in English other than 18.162.*

Officers of Instruction

Chairman

Christopher G. Faulkner

Assistant Professors

Christopher G. Faulkner

Patrick MacFadden

George McKnight

Susan Pick

Committee of Management

David Burnett (*Art History*)

James Downey (*Dean, Faculty of Arts*)

Christopher G. Faulkner (*Film Studies*)

Sam Kula (*National Film Archives*)

Franco Loriggio (*Italian*)

Patrick MacFadden (*Journalism*)

George McKnight (*English*)

Susan Pick (*Film Studies*)

Victor F. Valentine (*Sociology and Anthropology*)

General Information

Film Studies is an academic discipline concerned with the history, criticism, theory and practice of the cinema both as an art form and as a documentary record of our time. The cinema is a source of pleasure and knowledge, and its study should form a part of one's cultural education. The program will enable the student to develop a critical faculty appropriate to intelligent understanding of the cinema by approaching its study as a scholarly activity which rewards systematic research, analysis and exposition.

No practical film-making will be involved in this program.

In designing the curriculum the committee has sought both integration and progressive development. A careful curricular development will ensure intellectual growth through the three years devoted to study in the discipline. While the courses have been articulated together, they remain distinct enough to permit a number of related intellectual approaches to the study of film, and to enable those approaches to be related to work in other disciplines.

Major Program

All students who elect Film Studies as a Major subject must have their programs approved by a member of the Film Studies Committee. The Major in Film Studies will consist of a minimum of six courses in Film Studies, as follows:

1. Film Studies 19.100, or equivalent;
2. Two courses in Film Studies at the 300 level;
3. Three other courses in Film Studies.

In order to continue in the Major program a student must maintain a grade-point average of 4.0 or better in Film Studies courses.

Combined Majors programs may be arranged with other departments in the Faculties of Arts or Social Sciences. A combined Major in Film Studies and another subject will include at least five courses in Film Studies, as follows:

1. Film Studies 19.100, or equivalent;
2. A Film Studies seminar course at the 300 level;
3. Three other courses in Film Studies.

Both of the departments involved must approve a combined Majors program.

Handbook for Film Studies

A Handbook for Film Studies will be available after April 1, 1977 from the Secretariat, Film Studies Committee, Room 1708, Arts Tower, and from the Admissions Office, Administration Building.

Courses Offered

Introduction of Program

The full program of courses will be introduced over a three year period, as follows:

First offered 1976-77: 19.100, 19.268, 19.333, 19.368

First offered 1977-78: 19.210, 19.240, 19.399

First offered 1978-79: 19.200, 19.220, 19.378, 19.398

Film Studies 19.100

Introduction to Film Studies

This course is intended as an introduction to the fundamentals of film study. It is a course in eight units, each devoted to various aspects of the study of film. These units are divided into three streams: (a) Technics: 1 Film Technology; 2 Techniques of Editing. (b) History: 3 The Director; 4 Film Genres; 5 Period History; 6 The Documentary Method. (c) Critical Methods: 7 A Film Style; 8 Practical Criticism. A student is required to complete at least one but no more than two units from each stream. Each unit is of six weeks' duration.

Enrolment: 120.

Day and Evening divisions: Lecture four hours a week.

Film Studies 19.200

A Technical History of Film

A course in the technical evolution of the cinema from the precursors of the moving picture through the silent

and sound cinema to animation and experimental film. Films from throughout the world will be examined to demonstrate the ways in which various technical and industrial developments have been employed in the practice of film-making and have influenced the cinema's means of expression.

Prerequisite: Film Studies 19.100, or permission.

First offered 1978-79.

Film Studies 19.210

The Documentary Tradition

A study of the non-fiction film. This course will examine the work of individual documentary film-makers, documentary styles, and the work of organizations and institutions in the context of the history of documentary film-making.

Prerequisite: Film Studies 19.100, or permission.

Evening division: Lecture four hours a week.

Film Studies 19.220

National Cinema

This course will examine the fiction and non-fiction production of particular countries in order to determine the themes, the styles and the general character of a nation's cinema. The American cinema will not be studied in this course.

Prerequisite: Film Studies 19.100, or permission.

First offered 1978-79.

Film Studies 19.240

The Director

A detailed study of the themes, the characteristic style, development and influence of two or three directors from the world cinema.

Prerequisite: Film Studies 19.100, or permission.

Day division: Lecture four hours a week.

Film Studies 19.268

Forms and Conventions of the Cinema

This course will examine some of the cinema's characteristic forms and structures, and their stylistic and thematic conventions. With this perspective in mind, the course will emphasize the need to discover a critical idiom suited to the description, analysis, and evaluation of film. (Also listed as English 18.268.)

Enrolment: 60.

Prerequisite: Film Studies 19.100; or, a First-year course in English and permission.

Day division: Lecture and discussion four hours a week.

Film Studies 19.333

Film and Society

An examination of the motion picture as an historical document which reflects social, intellectual and cultural developments of the twentieth century. The ways in which films have both shaped and been shaped by some of these developments will be considered. (Also listed as Journalism 28.333.)

Enrolment: 60.

Prerequisite: Film Studies 19.100, or Third-year standing.

Day division: Lecture four hours a week.

Film Studies 19.368

Critical Problems, Theory and Aesthetics

This course will examine the assumptions which underlie the practice of much film criticism, investigate the principal theoretical works in the field, and inquire into the basic aesthetics of film. The object is to develop those tools of description and analysis appropriate to this art form.

Enrolment: 20.

Prerequisite: Film Studies 19.268.

Day division: Seminar four hours a week.

Film Studies 19.378

The Silent Cinema

A study of individual silent films representing the highest achievements in this distinct cinematic form. Films will be chosen from the world cinema to represent the work of individual film-makers, distinct film styles, and national film industries.

Prerequisite: Film Studies 19.268, or permission.

First offered 1978-79.

Film Studies 19.398

Special Topic

This course will offer selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.

Prerequisite: Third-year Major in Film Studies, or permission.

First offered 1978-79.

Film Studies 19.399

Independent Study

A research course for selected students who wish to study a topic of particular interest. An essay of 6,000 to 8,000 words will be the usual assignment. The course may only be taken once and is available to students in the Third year only. Projects must be organized on an individual basis with a member of the Film Studies Committee and approved by the Chairman. A written request outlining the project must be submitted by the last day for course changes.

Prerequisite: Permission and Third-year standing.

Summer and Evening Study

An effort will be made to offer courses regularly in the Summer and Evening divisions, although during the early years of the program it may not be possible to obtain the degree in Film Studies through the Summer or Evening divisions alone. Enrolment will be limited in courses offered in the Summer and Evening divisions, as it is in Day division courses.

Officers of Instruction

Chairman
H.P. Clive

Assistant Chairman
M. Gaulin

Co-ordinator, St. Patrick's College
O. Condemine

Supervisor of Majors Studies
M. Gaulin

Supervisor of Honours Studies
E.N. Zimmerman

Supervisor of Graduate Studies
J.S. Tassie

Professors
H.P. Clive
O. Condemine (*St. Patrick's College*)
C.P. Fleischauer
E.F. Kaye
J.S. Tassie

Associate Professors
F. Cousin
A. Elbaz
R. Galliani
M. Gaulin
P. Laurette
J. Miquet
A. Roth
S. Sarkany
P. van Rutten
E.N. Zimmerman

Assistant Professors
A. Halsall
J. Kealey (*St. Patrick's College*)
S. Robinson
P. Smart
D.W. Smith

Senior Lecturers
W.M. Fraser
J.-J. van Vlasselaer

Instructors
B. Burke
G. Riser
D. Rosse
A. Ruprecht
E. Voldeng

General Information

As Carleton University is situated in a bilingual community, students are encouraged to take advantage of the multiple opportunities for practical appreciation of the language. Radio, television, cinema, stage, the press and everyday conversation are at hand to supplement academic course work. Class lectures are conducted in French. The Department also has at its disposal a fully equipped language laboratory.

English-speaking students who enter the new program and wish to graduate with a Major or an Honours standing in French will normally be required to pass an oral examination testing their proficiency in spoken French. The examination will take place at the beginning of their final year, with the option of repeating it at the end of that year.

Old Program: See 1976-77 Calendar, p. 119.

New Program

The New Program is being implemented in three stages of which the first, comprising First year courses, came into effect in 1975-76 and the second, comprising Second year courses, in 1976-77. The final stage (Third and Fourth year courses) is being implemented in 1977-78.

Note:

Students who did their First year at Carleton during or after 1975-76 will come under the New Program. Other students, if they are in doubt about their program of studies, should consult the supervisors of Honours or Majors.

First Year Programs: Honours and Majors

Language requirement (one credit)

A student wishing to do Major or Honours work in French will take, normally in First year, French 20.111 (for Anglophones) or French 20.112 (for Francophones). Registration for French 20.111 and 20.112 will be through a placement test, which will determine whether the student enters directly either of these courses, or should first be required to take one of the more elementary courses.

Literature requirement (one credit)

The student will also take one of the following: French 20.161, 20.162, 20.163.

Note:

Honours students intending to choose the language-linguistics concentration would be well advised to take the required course Linguistics 29.100 during their first year.

Major Programs

1. Major in French

The following program will help the student to consolidate his knowledge of French grammar and to gain a comprehensive view of various aspects of French and French-Canadian literature.

The program consists of four courses beyond the common First year.

In the Second year students will normally take 20.211 (for Anglophones) or 20.212 (for Francophones), and two half-courses in literature chosen from the series 20.261* to 20.268*.

In the Third year students will normally take 20.312 and one literature course chosen from the series French 20.361 to 20.367, or, with permission, from 20.461 to 20.467.

Students should note that at least one of the literature credits must be obtained in a course or courses with a French content, and at least one in a course or courses with a French-Canadian content.

2. Combined Major

Combined major programs are available in French and other modern or classical languages, linguistics, or with another discipline in the Humanities or Social Sciences.

The program consists of three courses beyond the common First year.

In the Second year students will normally take French 20.211 (for Anglophones) or French 20.212 (for Francophones), and two half-courses in literature chosen from the series French 20.261* to 20.268*.

In the Third year students will normally take either French 20.312 or a literature course chosen from the series French 20.361 to 20.367 or, with permission, from French 20.461 to 20.467.

Students should note that at least one of the courses in literature must be a course with a French content, and at least one with a French-Canadian content.

Honours Programs

Several Honours programs are available. Course patterns are designed to assure a balanced appreciation of French and French-Canadian literature, with competence in oral and written expression in the French language. Interested candidates will note the general regulations governing Honours on p. 58.

Honours in French

This program is particularly suitable for students intending to pursue graduate studies in the field of Romance languages, literatures and related fields.

Two areas of concentration have been created in the French Honours program:

Concentration A:

This program consists of six credits in literature and two credits in French language and linguistics beyond the common First year. Two credits will also be taken in a language other than French or English.

The two credits in French language and linguistics will be chosen from French 20.211 (for Anglophones), French 20.212 (for Francophones), French 20.231 to 20.233*, 20.312, 20.331 to 20.334*, 20.431 to 20.435, with at least one credit at the 300/400 level.

The six credits in literature will normally be chosen as follows:

Second Year: four half-courses, from 20.261* to 20.268*;

Third Year: two courses, from 20.361 to 20.367;

Fourth Year: two courses, from 20.461 to 20.467.

Students should note that two of the literature credits must be obtained in courses with a French content, and two in courses with a French-Canadian content.

Concentration B:

This program consists of six credits in French language and linguistics and two credits in literature beyond the common First year. Students are furthermore required to take Linguistics 29.100 and to obtain one credit in a language other than French or English.

The two credits in literature will be selected as follows: two half-courses chosen from French 20.261* to 20.268*; one course from French 20.361 to 20.367 or 20.461 to 20.467.

The six credits in French language and linguistics will normally be taken as follows:

Second Year: French 20.211 (for Anglophones) or French 20.212 (for Francophones); 20.232* and a course chosen from 20.231, 20.233*, 20.331 to 20.334*;

Third Year: French 20.312 and a course chosen from French 20.331 to 20.334*, 20.431 to 20.435;

Fourth Year: two courses, chosen from French 20.431 to 20.435.

Students should note that one of the literature credits must be obtained in a course or courses with a French content, and one in a course or courses with a French-Canadian content.

Combined Honours

Combined Honours programs are available in French and English, German, History, Latin, Linguistics, Political Science, Russian or Spanish, and with other departments by arrangement.

The Honours programs combining two languages prepare the student either for graduate work or for the Ontario College of Education courses leading to the Interim High School Assistant's Certificate Type A, and must be planned in close consultation with the

departments concerned. The combined programs with History or Political Science are suited for various kinds of public careers.

Two areas of concentration have been created in the Combined Honours program:

Concentration C:

This program consists of four credits in literature and one credit in French language and linguistics beyond the common First year.

The one credit in French language and linguistics will be chosen from French 20.211 (for Anglophones), French 20.212 (for Francophones), French 20.231 to 20.233*.

The four credits in literature will normally be chosen as follows:

Second Year: two half-courses, from 20.261* to 20.268*;

Third Year: one course, from 20.361 to 20.367;

Fourth Year: two courses, from 20.461 to 20.467.

Students should note that at least one and a half of the literature credits must be obtained in courses with a French content, and at least one and a half in courses with a French-Canadian content.

Concentration D:

This program consists of four credits in French language and linguistics and one credit in literature beyond the common First year. One credit will also be taken in Linguistics 29.100.

The one credit in literature will consist of two half courses from the series 20.261* to 20.268*.

The four credits in French language and linguistics will normally be chosen as follows:

Second Year: French 20.211 (for Anglophones) or 20.212 (for Francophones);

Third Year: French 20.312;

Fourth Year: two courses from French 20.431 to 20.435.

Students should note that one of the courses in literature must be a course with a French content, and one with a French-Canadian content.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Graduate Program

The Department offers studies leading to the M.A. degree. Emphasis is placed on work in specialized fields, a particular author or period, and research on problems of literary history. For further information,

please consult the Graduate Studies and Research Calendar.

Courses Offered: New Program

Numbering system:

The first digit indicates the year in which the course is normally taken. The significance of the next two digits is as follows:

01 to 09: Language courses for students from other Departments.

11 to 29: "Core" language and linguistics courses principally for Majors or Honours.

31 to 49: Other language and linguistics courses.

51 to 59: Literature courses for students from other Departments.

61 to 79: "Core" literature courses principally for French Majors or Honours.

81 to 99: Other literature courses.

Placement Test for Language Students

Students who did not previously take a language course in the Department and who wish to enrol in a Qualifying University year or First year language course must take the placement test which will be administered by department members during registration. Based on test results, the student will be placed at the appropriate level, in one of the following courses: French 20.001, 20.011, 20.108, 20.111, or 20.112.

Notes

There are two exceptions to the foregoing rule:

1. Students with absolutely no previous training in French may enrol directly in French 20.001. All others must take the placement test.

2. Students enrolling in the reading course 20.106* are not required to take the placement test.

Students desiring a First-year French credit to satisfy the language requirement of their department or school should consult their department or school as to the acceptability of French 20.001 and 20.011.

French 20.001

Elementary French

This course is designed for beginners in the language. Classes will use audio-visual methods and emphasis will be given to the spoken language for both classes and laboratory work. The credit gained from this course will not count as part of the specific requirements for a Major or Honours in French. No auditors.

Registration: See foregoing paragraph on placement test.

Day and Evening divisions: Five hours a week.

A. Ruprecht and members of the Department

French 20.011

Intermediate French

The course provides intensive practice in pronunciation and grammar, with emphasis on the development of oral proficiency. Reading selections from the twentieth century, as well as oral and written exercises. Compulsory attendance for both classes and laboratory work. The credit gained from this course will not count as part of the specific requirements for a Major or Honours in French. No auditors.

Registration through Placement Test.

Day and Evening divisions: Three hours a week, plus one hour of laboratory.

W.M. Fraser and members of the Department

French 20.106*

Reading French

This course is designed to enable specialists from other Departments in the Humanities, Social Sciences and Sciences to read technical texts in French with reasonable ease. The goal is comprehension of the written word only. After a review of basic French grammar, attention will be concentrated on reading selected material covering various fields of interest. The half-credit gained from this course will not count as part of the specific requirements for a Major or Honours in French. No auditors.

Day division, First and Second terms: One hour a week.

French 20.107*

Practical Phonetics

Practical exercises in pronunciation. Attention will be given to individual problems. Laboratory work on material introduced in class. This course may be taken by students intending to major in French as well as by students from other Departments. The half-credit gained from it will not count as part of the specific requirements for a Major or Honours in French. No auditors.

Registration through Placement Test.

Not offered 1977-78.

French 20.108

French Language Course for Non-Majors

Intensive study of the French language for students from other Departments, based on audio-oral principles. Emphasis is placed on oral comprehension and expression, without omitting the written aspects of the language. The student will be encouraged to speak French. Compulsory attendance at both classes and laboratory. No auditors.

Registration through Placement Test.

Day and Evening divisions: Three hours a week plus laboratory assignments.

G. Riser and members of the Department.

French 20.111

Advanced French (A)

Intensive study of the French language, both spoken and written, with particular attention to the vocabulary, syntax and the various levels of speech; oral reports and written assignments. This course is particularly designed for Anglophone students intending to specialize in French, but it is also open to all those students

who already have a good grounding in the language. Compulsory attendance for classes. No auditors.

Registration through Placement Test.

Day and Evening divisions: Two one-and-a-half-hour lectures a week plus laboratory assignments.

R. Galliani and members of the Department

French 20.112

Advanced French (B)

Comprehensive study of modern grammar. Acquisition of an extensive vocabulary and variety of idioms. Grammatical study of a selection of texts, both prose and poetry. Exercises in writing short essays. This course is particularly designed for Francophone students intending to specialize in French but it is also open to those students from other departments who possess the necessary proficiency. Compulsory attendance for classes. No auditors.

Registration through Placement Test.

Day and Evening divisions: Two one-and-a-half-hour lectures a week.

D. Rosse

French 20.151

French-Canadian Literature

A course for students who do not intend to select French as a Major or Honours subject. Its purpose is to present the student with a survey of French-Canadian literature with emphasis on contemporary authors. Students will be encouraged to use the French language for self-expression but need not do so. English may occasionally be used by the instructor in presenting and commenting on the texts.

Not offered 1977-78.

French 20.152

French Literature

A course for students who do not intend to select French as a Major or Honours subject. Its purpose is to present the student with a survey of French literature, with emphasis on contemporary authors. Students will be encouraged to use the French language for self-expression but need not do so. English may occasionally be used by the instructor in presenting and commenting on the texts.

Day division: Three hours a week.

C.P. Fleischauer

French 20.161

Introduction to Literature (A)

This course introduces the student to a certain number of general views on literature with particular attention to the following: the basic elements of a literary work (characters, story, plot, subjects, themes), the problems of interpretation, the intentions of the author and the perception of the reader, the work in its various contexts: biographical, literary, sociological; the formal aspects typical of certain genres, particularly the drama and poetry. The texts illustrating these aspects in French literature will be selected within the period from Molière (seventeenth century) to Verlaine (nineteenth century).

Prerequisite: Ontario Grade 13 French, French 20.011, or equivalent.

Day division: Three hours a week and one discussion group period.

P. Laurette

French 20.162

Introduction to Literature (B)

This course introduces the student to a certain number of general views on literature with particular attention to the following: the basic elements of a literary work (characters, story, plot, subjects, themes), the problems of interpretation, the intentions of the author and the perception of the reader, the work in its various contexts: biographical, literary, sociological; the formal aspects typical of certain genres, particularly the drama and poetry. The texts illustrating these aspects in French literature will be selected within the period from Zola (nineteenth century) to the present day.

Prerequisite: Ontario Grade 13 French, French 20.011 or equivalent. Students taking this course will not be allowed to count French 20.266* as part of the specific requirements for a Major or Honours in French.

Day division: Three hours a week and one discussion group period.

A. Halsall

French 20.163

Introduction to Literature (C)

This course introduces the student to a certain number of general views on literature with particular attention to the following: the basic elements of a literary work (characters, story, plot, subjects, themes), the problems of interpretation, the intentions of the author and the perception of the reader, the work in its various contexts: biographical, literary, sociological; the formal aspects typical of certain genres, particularly the drama and poetry. The texts illustrating these aspects in French-Canadian literature will be selected within the period from Nelligan (nineteenth century) to the present day.

Prerequisite: Ontario Grade 13 French, French 20.011, or equivalent. Students taking this course will not be allowed to count French 20.268* as part of the specific requirements for a Major or Honours in French.

Evening division: Three hours a week and one discussion group period.

D.W. Smith

French 20.181

Civilization I

This course entails the study of a certain number of important elements of the culture and civilization of two French-speaking countries, alternatively French Canada and France: culture, customs, institutions etc., with emphasis on the present situation. In 1977-78 the course will be devoted to French-Canadian civilization.

Prerequisite: Permission of the Department.

Day division: Three hours a week.

J.S. Tassie

French 20.211

Stylistique de l'expression (A)

Ce cours prépare l'étudiant anglophone à composer des textes dans un français soutenu et nuancé, par l'enrichissement du vocabulaire, par l'emploi de mots précis, d'images et autres procédés utilisés dans la composition de textes. Pratique de la composition écrite et de l'exposé oral.

Prerequisite: French 20.111 or permission of the Department.

Day and Evening divisions: Three hours a week.

A. Elbaz and members of the Department

French 20.212

Stylistique de l'expression (B)

Ce cours destiné aux étudiants francophones comporte des objectifs similaires à ceux du cours French 20.211, mais s'inspire d'une méthode et d'ouvrages adaptés à leur niveau de compétence linguistique.

Prerequisite: French 20.112 or permission of the Department.

Day and Evening divisions: Three hours a week.

P. Laurette, G. Riser

French 20.231

Initiation à la traduction

Techniques de la traduction. Traduction du français à l'anglais et de l'anglais au français. Textes d'intérêt général.

Prerequisite: French 20.111 or 20.112 or permission of the Department.

Day and Evening divisions: Three hours a week.

S. Robinson, E. Voldeng

French 20.232*

Introduction à l'étude linguistique du français

Revue des éléments essentiels en recherche linguistique; application de ces éléments à la description et à l'analyse de la langue française; préparation aux différents cours de linguistique française offerts au Département.

Prerequisite: French 20.111 or 20.112 and Linguistics 29.100 or permission of the Department.

Evening division, First term: Three hours a week.

F. Cousin

French 20.233*

Phonétique et phonologie du français

Révision des notions fondamentales de la phonétique française. Organes de la parole. Phonèmes du français. Phonétique articulatoire et acoustique; phonétique combinatoire. Prosodie. Notions fondamentales de la phonologie du français. Les traits distinctifs du français.

Prerequisite: French 20.111 or 20.112 and Linguistics 29.100 or permission of the Department.

Evening division, Second term: Three hours a week.

F. Cousin

French 20.261*

La littérature du Moyen âge

Introduction aux principaux courants de la littérature médiévale et approfondissement d'un ou plusieurs

aspects de celle-ci par l'étude détaillée de certains textes représentatifs.

Prerequisite: French 20.161 or 20.162 or 20.163 or permission of the Department.

Not offered 1977-78.

French 20.262*

La littérature du XVI^e siècle

Introduction aux théories de la Pléiade et aux aspects principaux de la littérature de la Renaissance, avec approfondissement de différents aspects de cette littérature par l'étude détaillée de quelques textes.

Prerequisite: French 20.161 or 20.162 or 20.163 or permission of the Department.

Day division, Second term: Three hours a week.

H.P. Clive

French 20.263*

La littérature du XVII^e siècle

Le classicisme et/ou le mouvement baroque dans la littérature française du XVII^e siècle, notamment le théâtre. Etude détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs.

Prerequisite: French 20.161 or 20.162 or 20.163, or permission of the Department.

Not offered 1977-78.

French 20.264*

La littérature du XVIII^e siècle

La fin du classicisme, le siècle de la raison, les Encyclopédistes et les Philosophes. Approfondissement d'un ou plusieurs aspects de cette littérature par l'étude détaillée de quelques textes.

Prerequisite: French 20.161 or 20.162 or 20.163, or permission of the Department.

Day division, First term: Three hours a week.

R. Galliani

French 20.265*

La littérature du XIX^e siècle

Introduction aux principaux courants de la littérature française du XIX^e siècle: Romantisme, Réalisme, Parnasse, Symbolisme. Etude plus détaillée d'un ou plusieurs de ces aspects dans un choix de textes représentatifs.

Prerequisite: French 20.161 or 20.162 or 20.163, or permission of the Department.

Evening division, Second term: Three hours a week.

A. Roth

French 20.266*

La littérature du XX^e siècle

Survol de la littérature française moderne du Naturalisme au Nouveau roman; l'unité et la diversité de cette littérature avec des exemples choisis parmi les textes représentatifs d'un ou plusieurs aspects les plus marquants. This course will not count as part of the specific requirements for a Major or Honours in French if taken in conjunction with French 20.162.

Prerequisite: French 20.161 or 20.162, or 20.163 or permission of the Department.

Evening division, First Term and Day division, Second term: Three hours a week.

E.N. Zimmerman

French 20.267*

La littérature du XIX^e siècle au Canada français

Introduction aux principaux courants idéologiques et littéraires. Les débuts du roman et/ou de la poésie d'après quelques textes représentatifs.

Prerequisite: French 20.161 or 20.162 or 20.163, or permission of the Department.

Evening division, First term and Day division, Second term: Three hours a week.

M. Gaulin, J.S. Tassie

French 20.268*

La littérature du XX^e siècle au Canada français

Evolution des principaux genres littéraires vue dans une optique sociale et esthétique. Le cours portera principalement sur l'époque contemporaine. This course will not count as part of the specific requirements for a Major or Honours in French if taken in conjunction with French 20.163.

Prerequisite: French 20.161 or 20.162 or 20.163, or permission of the Department.

Day division, First term and Evening division, Second term: Three hours a week.

M. Gaulin, J.S. Tassie

French 20.281

Civilisation II

Ce cours poursuivra les études menées dans le cours de Civilisation I en approfondissant certains aspects se rattachant à la notion générale de "civilisation" et offrira en alternance un contenu français et canadien-français pour permettre cette continuation.

Prerequisite: French 20.181, or permission of the Department.

Not offered 1977-78.

French 20.282

Le théâtre : Théorie et pratique

Examen détaillé de plusieurs oeuvres théâtrales avec, pour objet, la préparation à des travaux pratiques (diction, interprétation théâtrale) et la participation à une ou plusieurs pièces présentées dans le cadre du cours.

Prerequisite: A First year course in French or permission of the Department.

Evening division: Three hours a week.

J.-J. van Vlasselaer

French 20.312

Cours de grammaire descriptive

Etude de la langue française par une réflexion sur les structures de la langue et l'utilisation des grandes grammaires descriptives du français. Méthodologie de la recherche grammaticale, établissement de bibliographies et de corpus. Exercices pratiques. Cours commun aux étudiants anglophones et francophones.

Prerequisite: French 20.211 or 20.212 or permission of the Department.

Day division: Three hours a week.

J.-J. van Vlasselaer

French 20.331

Traduction spécialisée

structuration des textes spécialisés (scientifique, ministériel, économique, littéraire); préparation au vocabulaire et aux structures spécifiques; traduction de textes spécialisés du français à l'anglais et de l'anglais français.

Prerequisite: French 20.231 or 20.232* or permission of the Department.

Day division: Three hours a week.

Elbaz

French 20.332

Français canadien

histoire de la langue française au Canada; la structure phonétique, morphologique et syntaxique du français canadien; le lexique: archaïsmes, anglicismes, canadismes; variations sociales et régionales; problème de norme.

Prerequisite: French 20.232* or permission of the Department.

Evening division: Three hours a week.

Robinson

French 20.333*

Histoire de la langue (A)

étude phonétique, graphique, syntaxique et morphologique du Vieux français (XII^e siècle) et du Moyen français (XIII^e siècle), avec mise en valeur des phases intermédiaires pour les principaux aspects du langage.

Prerequisite: Permission of the Department.

Not offered 1977-78.

French 20.334*

Histoire de la langue (B)

les transformations phonétiques, graphiques, morphologiques et syntaxiques les plus importantes du français de la Renaissance au français moderne.

Prerequisite: Permission of the Department.

Not offered 1977-78.

French 20.361

Littérature d'imagination (A)

le roman au dix-huitième siècle. Etude des oeuvres se rattachant à la tradition classique du roman précieux ou bourgeois (Lesage, Marivaux, Prévost) et de celles plus originales témoignant des nouvelles tendances du siècle des Lumières (Voltaire, Diderot, Laclos).

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.

Evening division: Three hours a week.

P. Fleischauer

French 20.362

Littérature d'imagination (B)

Not offered 1977-78.

French 20.363

Etudes littéraires

étude d'un phénomène littéraire de portée plus spécifique que dans les cours à caractère historique de deuxième année, mais qui se rattache encore à

l'historicité, tel que la définition et l'illustration de la notion de mouvement, de courant, d'école.

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.

Not offered 1977-78.

French 20.364

Le théâtre

Etude de quelques pièces choisies pour leur valeur intrinsèque, leur intérêt scénique et leur importance dans l'histoire du théâtre et de la littérature. Situation des pièces dans l'historique du théâtre. Arrière-plan social. Etude des circonstances de leur composition (l'auteur, sources, genèse) et de leur représentation (public, troupes, comédiens etc.). Etude interne des pièces: personnages, décors, intrigue, thèmes, structures dramatiques, éléments du style. Accueil de la pièce, sa signification, sa portée et son influence.

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.

Not offered 1977-78.

French 20.366

Littérature et sciences humaines (I)

Nouvelles perspectives ouvertes dans les études littéraires par la linguistique, les communications et l'anthropologie (éléments de base). Analyse de textes de Jarry, Lautréamont, Zola, Apollinaire, Genêt, etc., à la lumière des sciences de l'homme. (Problématique de choix: formes et signification.)

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.

Day division: Three hours a week.

S. Sarkany

French 20.367

Méthodologie et littérature (I)

Discussion d'un certain nombre de conceptions critiques du texte littéraire compris comme système, c'est-à-dire comme interaction de phénomènes déductibles du texte.

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.

Not offered 1977-78.

French 20.381

Aspects de la littérature canadienne-française

L'individu devant la société et l'histoire. Sondage de plusieurs aspects des rapports de l'individu avec la société et l'histoire; problèmes de la survivance, de l'identité, de la langue, de l'éducation, de la religion; la révolution tranquille etc.

Prerequisite: French 20.267* or 20.268* or permission of the Department.

Day division: Three hours a week.

J.S. Tassie

French 20.382*

Explication de texte

Examen détaillé d'un certain nombre de textes courts pour développer l'art de l'analyse critique et esthétique d'une oeuvre littéraire.

Prerequisite: A course from series French 20.261* to 20.268* or permission of the Department.
Not offered 1977-78.

French 20.431

Traduction littéraire

Linguistique différentielle: morpho-syntaxe et sémantique; analyse comparée de textes littéraires anglais et français; étude de traductions d'auteurs; exercices pratiques de traduction littéraire.

Prerequisite: French 20.231 and 20.232* or permission of the Department.

Not offered 1977-78.

French 20.432

Morphologie et syntaxe du français

Grammaires modernes du français. Le cours a pour objet de familiariser les étudiants avec les grammaires modernes du français issues des derniers développements de la linguistique. On étudiera en particulier les systèmes grammaticaux chez Tesnière, Guillaume, Dubois, Gross, et Pottier.

Prerequisite: French 20.312 or permission of the Department.

Day division: Two hours a week.

F. Cousin

French 20.433

Sémantique et lexicologie du français

Les méthodes modernes de la sémantique appliquées à l'analyse des textes littéraires. Sémantique, lexicologie et lexicographie françaises. Le cours portera en outre sur l'évolution de la sémantique depuis Michel Bréal, le concept de sens et de signification, la détermination des significations, l'évolution des sens et ses lois et l'établissement du lexique et sa structuration.

Prerequisite: Permission of the Department.

Not offered 1977-78.

French 20.434

Stylistique littéraire

Le cours est destiné à sensibiliser les étudiants aux procédés de l'expression littéraire et à les préparer à la critique stylistique. On étudiera en particulier les points suivants: la théorie du style littéraire, la fonction de la langue dans l'expression littéraire; la phonostylistique: utilisation des accents, des rythmes, des sons; la stylistique des mots: l'utilisation du vocabulaire, les effets affectifs, les effets par évocation; les translations figuratives: métaphores, métonymies, etc.; la stylistique de la phrase, etc.

Prerequisite: French 20.232 and 20.233* or permission of the Department.

Evening division: Two hours a week.

P. Laurette

French 20.435

Linguistique appliquée: pédagogie de l'enseignement du français

Revue des notions de linguistique, de phonétique et de psycholinguistique, se rapportant à l'apprentissage et à l'enseignement du français comme langue première et

langue seconde. Etude des processus d'acquisition de la langue. Description de la langue pour la préparation de l'enseignement. Critique scientifique des méthodes et des méthodologies d'enseignement. Etude des relations entre les recherches sur la communication et l'apprentissage du français.

Prerequisite: French 20.232* or permission of the Department.

Not offered 1977-78.

French 20.461

Littérature d'Idées (A)

Littérature et sciences au XVIII^e siècle. Les divers emplois des découvertes scientifiques dans la littérature du siècle philosophique. Montesquieu et les sciences sociales; Voltaire et la physique expérimentale; Condillac et l'entendement; Buffon et les sciences de la nature; Diderot et les sciences de l'homme; Rousseau et l'économie politique; Condorcet et l'histoire.

Prerequisite: A course from series French 20.361 to 20.367 or permission of the Department.

Day division: Two hours a week.

CP. Fleischauer

French 20.462

Littérature d'Idées (B)

Not offered 1977-78.

French 20.463

Aspects de la littérature (A)

L'existentialisme français. Etude de l'existentialisme français comme phénomène à la fois littéraire, intellectuel et socio-culturel. Etude thématique et formelle de certains écrivains français existentialistes et "existential saints".

Prerequisite: A course from series French 20.361 to 20.367 or permission of the Department.

Evening division: Two hours a week.

E.N. Zimmerman

French 20.464

Aspects de la littérature (B)

Le pays chez Jacques Ferron, Victor-Lévy Beaulieu et Gérard Bessette. Etude des différents modes de représentation du pays de Québec (images, symboles, anecdotes) dans les romans suivants: *La Nuit*, *L'Amélancheur*, *Le Salut de l'Irlande*; *Jos Connaissant*, *Un Rêve québécois*, *Les Grands-Pères*; *Le Libraire*, *Le Cycle*.

Prerequisite: A course from series French 20.361 to 20.367 or permission of the Department.

Day division: Two hours a week.

D.W. Smith

French 20.466

Littérature et sciences humaines II

Influence réciproque des phénomènes littéraires et autres phénomènes linguistiques et culturels, avec ses répercussions sur l'auteur, l'oeuvre et son public.

Prerequisite: French 20.366 or permission of the Department.

Not offered 1977-78.

French 20.467

Méthodologie et littérature II

Analyse structurale des romans de Flaubert. La situation des huit romans de Flaubert dans le sous-genre approprié pour découvrir le meilleur moyen de les comprendre et les critères les plus précis sur lesquels les juger.

Prerequisite: French 20.367 or permission of the Department.

Evening division: Two hours a week.

A. Halsall

French 20.481

Littératures francophones

Etudes de textes littéraires, non canadiens ou non français, qui illustreront les aspects autochtones et/ou interdépendants de la littérature d'un pays francophone vis-à-vis des autres littératures de la Francophonie.

Prerequisite: A course from series French 20.361 to 20.367 or permission of the Department.

Not offered 1977-78.

French 20.482

Initiation à la recherche

Comment et où effectuer des recherches pour l'étude d'une oeuvre, d'un auteur ou d'un thème. Les sources bibliothécaires et autres. Travaux pratiques: établissement de bibliographies, de fiches, d'une édition critique etc.

Prerequisite: Permission of the Department.

Not offered 1977-78.

French 20.483

Tutorial

Prerequisite: Permission of the Department.

Not offered 1977-78.

Courses Offered at St. Patrick's College

French

20.011 Intermediate French

06.100 A General Introduction to French Literature

20.111 Advanced French (A)

06.204 Cours avancé de français oral

06.222 Cours avancé de français écrit

06.227 La littérature canadienne-française

06.314 Aspects de la littérature française du XXe siècle

Graduate Courses Open to Undergraduates

(With permission of the Department)

French

20.520 Le théâtre de Marcel Dubé

20.520 (Summer 1977) Les structures thématiques de la poésie canadienne-française

20.530 La poésie de Ronsard

20.540 Jean-Jacques Rousseau

20.550 Vision artistique de la société dans *A la recherche du temps perdu*

20.585 Poétique du récit court moderne.

Courses planned for Summer School and Evening Division, 1977-1980

Summer 1977

20.001, 20.011, 20.108, 20.111, 20.163, 20.211, 20.231, 20.262*, 20.265*, 20.520.

Old Program: 20.335, 20.460.

Evening division 1977-78

20.001, 20.011, 20.108, 20.111, 20.112, 20.163, 20.211, 20.212, 20.231, 20.232*, 20.233*, 20.265*, 20.266*, 20.267*, 20.268*, 20.282, 20.332, 20.361, 20.434, 20.463, 20.467.

Due account will be taken in the planning of Evening courses for the Winter sessions and Summer school programs over the next three years of the desirability of enabling students to complete a degree program over a period of four years.

Department of German

Officers of Instruction

Chairman

Basil Mogridge

Professor

E.M. Oppenheimer

Associate Professors

Joseph B. Dallett

Jutta Goheen

Robert Gould

Basil Mogridge

Anna M. Rosenberg

Sessional Lecturers

Martha Camfield

Trudy Kassner

Inara Moeser

Daniel Poliquin

John Struyk

General Information

German language and literature can be seen in various ways: in their historical dimension, with all the wealth of cultural context that that implies; as the subject matter of more theoretical frames of reference such as linguistics or aesthetics; and as contemporary means of communication and illumination. These three approaches all play a part in German studies at Carleton.

The Department's offerings range from German for beginners (German 22.015, 22.016, 22.017 and 22.102) to an M.A. program.

It is emphasized that, apart from the slight limitations concerning the maximum number of courses permissible at the Qualifying University year and First year levels (details are to be found in the sections of the calendar outlining faculty regulations), beginners' language courses carry full credit towards a degree.

Students who wish to take a beginners' course followed by a 100-level course, and who believe their intentions may conflict with faculty regulations, are urged to contact the Department without delay.

A number of the Department's courses are taught partly or wholly in German. Students may contact the Department to discover the language of instruction in a particular course.

It is helpful for students who, after reading the course descriptions, are in doubt as to which course to take, consult the Department before registration week.

Intensive Introductory German

Students considering beginning the study of German at Carleton should take particular note of German 22.102, Intensive Introductory German (two credits). This course is designed to enable students to reach in one year the level of proficiency normally attained over two years in German 22.015 (or 22.016) and 22.100.

Alternative Undergraduate Programs

There are four alternative undergraduate programs, all of which normally include the following core in German:

1. 22.100 Intermediate German A;
or 22.101 Intermediate German B;
or 22.102 Intensive Introductory German;
2. 22.201* Spoken German;
22.202* Written German;
3. 22.250 German Literature of the Eighteenth Century.

To that core each student during his program, and in consultation with the Department, adds a number of options from German 22.212*, 22.280, and higher courses. The number of these options to be added to the core varies according to the program.

Single Major

Core plus three courses (or equivalent including half courses), at least one of them at the 300 level; i.e. six in all.

Combined Major

Core plus two courses (or equivalent including half courses), at least one of them at the 300 level; i.e. five in all.

Single Honours

Core plus six courses (or equivalent including half courses), at least one of them at the 400 level; i.e. nine in all.

Combined Honours

Core plus four courses (or equivalent including half courses), at least one of them at the 400 level; i.e. seven in all.

Combined Majors Programs

Combined Majors are possible with a number of other subjects, among them Art History, Music, History, Philosophy, Political Science, Religion, Linguistics, Latin, English, French, Spanish, Italian, and Russian. Early consultation with the departments concerned is advised.

Combined Honours Programs

Combined Honours are possible with a variety of subjects. Among the possibilities are German and Art History, German and English, German and French, German and Geography, German and History, German and Italian, German and Latin, German and Linguistics, German and Mathematics, German and Music, German and Philosophy, German and Political Science, German and Psychology, German and Russian, German and Spanish. Early consultation with the departments concerned is strongly advised. All Honours programs, including combined ones, are designed to serve, where required, as a basis for further work in German at the graduate level.

Related Courses

In various departments of the University, courses are offered on other aspects of the German-speaking area; these courses cover the past and the present, and include a wide variety of topics in the humanities and social sciences. Students considering a Major or Honours degree in German should not overlook the opportunities present in the University which enable them to add, if they so wish, these additional dimensions to their studies. Conversely, students in disciplines other than German who have a particular interest in Europe and its languages should be aware of the availability to them of the German Department's courses.

Graduate Program

The Department of German offers studies leading to the degree of Master of Arts. For further details consult the Graduate Studies and Research Calendar.

Courses Offered

German 22.015

Introductory German A

A beginners' course designed to give students a sound grasp of the fundamentals of written and spoken German. (Guidance in the reading of scientific papers can be arranged in the latter part of the course.)

This course normally carries full credit towards a degree.

Text: Lohnes and Strothmann, *German, a Structural Approach, Second Edition*.

Day and Evening divisions: Four hours a week.

Summer 1977, Day and Evening divisions.

German 22.016

Deutsch I

A beginners' course with more emphasis on the spoken word than German 22.015, but without neglecting reading and writing skills. Extensive oral practice in class and with laboratory equipment. This course normally carries full credit towards a degree.

Text: Moeller and Liedloff, *Deutsch heute: Grundstufe*.

Day and Evening divisions: Four hours a week.

German 22.017

Introductory German B

An elementary course using an empirical approach: the discovery of grammatical patterns and the development of skills will be based on texts without the interposition of a grammar book. The acquisition of a sizeable active vocabulary is one of the main objectives. Enrolment will be limited to one section.

Not offered 1977-78.

German 22.100

Intermediate German A

An extensive review of grammar, and practice in written and spoken German: Examples of shorter fiction, and non-fiction, poetry and the drama (such writers as Thomas Mann, Kafka, Brecht, Hildesheimer). One section will place special emphasis on Rechtschaffen and Homberger, *German for Research: Humanities and Social Sciences* (Weber, Freud, Dahrendorf, etc.).

Prerequisite: Grade 11 or 12, German 22.015, 22.016 or 22.017, or equivalent.

Texts: Brecht, *Der gute Mensch von Sezuan*; Conant, *Cochran's German Review Grammar, Third Edition*; Hill, *Lesen mit Gewinn*; Rechtschaffen and Homberger, *German for Research: Humanities and Social Sciences* (in one section only); and other readings in German.

Day and Evening divisions: Four hours a week.

Summer 1977, Evening division.

Robert Gould and others

German 22.101

Intermediate German B

The course is designed both to develop language skills and familiarity with German usage and also to provide an acquaintance with some features of German literature in the eighteenth, nineteenth and twentieth centuries. Readings will be drawn from postwar essayistic, journalistic, and literary writing, and from the works of such writers as Goethe, Kleist, Büchner, Keller, Thomas Mann, Kafka, Brecht, and Frisch. Short essays in German, translation, summary writing; the course will be taught largely in German.

Prerequisite: Good standing in Grade 13, or in German 22.015 or 22.016 or in 22.017, or equivalent.

Texts: Spaethling and Weber, *A Reader in German Literature*; and a language instruction text.

Day division: Four hours a week.

Joseph B. Dallett

German 22.102

Intensive Introductory German (two credits)

An intensive course designed to enable students with little or no previous knowledge of German to reach in one year the level of proficiency normally attained over two years in German 22.015 (or 22.016) and 22.100. The course will thus provide a basis for majoring in German, but enrolment will not be restricted to intending Majors. Students not making satisfactory progress will be transferred to one of the regular introductory courses (German 22.015 or 22.016).

Prerequisite: Permission of the Department.

Texts: Moeller and Liedloff, *Deutsch heute: Grundstufe*; Gottfried Keller, *Kleider machen Leute*; Metzger, *Paul Klee*; Böll, *Vier Hörspiele*.

Day division: Six hours a week.

Basil Mogridge, Ursula Mount

German 22.201*

Spoken German

Work in small groups with special emphasis on comprehension and self-expression in everyday spoken German.

Prerequisite: German 22.100, 22.101 or 22.102, or permission. (This course is not open to native speakers of German.)

Day and Evening divisions: This course lasts from September to April, two hours a week.

German 22.202*

Written German

A course parallel to German 22.201*, and emphasizing comprehension and self-expression in written German, by such means as essay-writing and translation into and from German.

Prerequisite: German 22.100, 22.101 or 22.102, or permission.

Day and Evening divisions: This course lasts from September to April, two hours a week.

German 22.212*

Descriptive Analysis of Present-day German

Problems of German sentence structure presented in the light of current linguistic theories. Semantic change, particularly as the result of linguistic borrowing from American English in written German. Linguistic borrowing as a feature of bilingualism: syntactic and semantic analysis of written and spoken German in Canada.

Prerequisite: German 22.100, 22.101 or 22.102, and Linguistics 29.100, or permission.

Not offered 1977-78.

German 22.220

Studies in German Culture and History

Under this general title the Department offers courses designed for students who do not have German. (Students specializing in German may take these courses, but they are not counted towards the Department's requirements for a Major or Honours in German.)

Prerequisite: Second year status, or permission.

Not offered 1977-78.

German 22.250

German Literature of the Eighteenth Century

The literature of the Enlightenment, Storm and Stress, and Early Classicism, with special emphasis on the works of Lessing, Goethe and Schiller.

Prerequisite: German 22.100, 22.101 or 22.102, or permission.

Texts: Lessing, *Minna von Barnhelm*; Schiller, *Kabale und Liebe*; Wieland, *Musarion*; Goethe, *Werther*, *Iphigenie*, *Faust I*, *Gedichte*.

Evening division: Three hours a week.

Robert Gould

German 22.280

German Literature of the Twentieth Century

Representative texts from drama, poetry, and prose fiction, in the period from Hauptmann to Grass.

Prerequisite: German 22.100, 22.101 or 22.102, or permission.

Day division: Three hours a week.

Basil Mogridge

German 22.301*

Advanced Spoken German

A sequel to German 22.201*, this course includes a wider range of spoken German: The language not only of conversation but also of more formalized speech, to be practised and also to be studied from texts.

Prerequisite: German 22.201* or 22.202*, or permission.

Day division: This course lasts from September to April, two hours a week.

Jutta Goheen

German 22.302*

Advanced Written German

A sequel to German 22.202*. This course aims at ensuring a good appreciation of the subtleties of modern written German and a high degree of articulacy in using it oneself.

Prerequisite: German 22.202* or 22.212*, or permission.

Day division: This course lasts from September to April, two hours a week.

Joseph B. Dallett

German 22.312

Linguistic Stylistics

Linguistic structures and literary style: sound patterns (Rilke), time and tenses (Thomas Mann), spatial prepositions (Eichendorff), aspects of syntactic structure (Grass), semantic analysis of metaphor (Kafka).

Prerequisite: German 22.202* or 22.212*, or permission.

Day division: Three hours a week.

Jutta Goheen

German 22.340*

German Literature of the Sixteenth Century

Readings in imaginative literature (e.g., Hans Sachs, the mannerist Johann Fischart, and the *Faustbuch*), and also in non-fictional prose (parts of Dürer's journal,

Paracelsus' treatise on the *Elementargeister*); particular emphasis on the German Reformation, including Luther's translation of the Bible (in excerpt), selected hymns, and polemical writings by orthodox Protestants, Catholics, and Spiritualist dissenters; examples of such genres as verse satire (Brant's *Narrenschiff*), *Meistersang*, Biblical drama, and the *Fastnachtspiel*.
Prerequisite: German 22.250, or permission.
This course alternates with German 22.341*.
Not offered 1977-78.

German 22.341*

German Literature of the Seventeenth Century

An introduction to the literature of the German Baroque. Prose fiction will be represented by Grimmelshausen's *Courasche* and Beer's *Narrenspital*; the drama by Gryphius' *Horribilicribrifax* and Cardenio und Celinde, as well as Weise's *Vom verfolgten Lateiner*; a broad spectrum of lyric poetry will be considered (through Wagenknecht's anthology, *Gedichte 1600-1700*), with special emphasis on religious ecstasy, epigrammatic intensity, and erotic fascination in some six major poets.
Prerequisite: German 22.250 or permission.
Evening division, First term: Three hours a week.
Joseph B. Dallett

German 22.350*

Aspects of German Literature 1700-1950

Selected aspects of the literature of the period from the early eighteenth century to the mid twentieth century, chosen in such a way that some part of the nineteenth century is always included. 1977-78: The world of nature in the German literary imagination. Poetic and fictional embodiments of the natural world; man's separation from nature, his projection of himself into it, and his 'redemption' of it through art. Brockes, Klopstock, Hölderlin, Mörike, Droste, Stifter, Rilke, Hesse, among others.
Prerequisite: German 22.250 or permission.
Evening division, Second term: Three hours a week.
Joseph B. Dallett

German 22.380*

Special Topic in Twentieth Century German Literature

The course focuses on a selected topic to be drawn from the literary movements, genres, authors or themes of the period. In 1978-79 the course will deal with the literature of East Germany, using both selected literary texts (examples of fiction, poetry, and drama) and some background materials of a more theoretical or more overtly political kind.
Prerequisite: German 22.202* or 22.212* or 22.250 or 22.280, or permission.
Texts: Walwei-Wiegemann, *Neuere DDR-Literatur, Texte und Materialien*; Hamburger, *East German Poetry, an Anthology*; Wolff, *Fahrt mit der S-Bahn, Erzähler der DDR*; Plenzdorf, *Die neuen Leiden des jungen W.*
Not offered 1977-78.

German 22.412

History of the German Language

Significant stages in the development of German: The evolution of its phonetic and grammatical structure, its vocabulary and stylistic norms. The social role of language of the twentieth century: language as a means of manipulation (Nazi Germany; advertising), divided German (FRG and GDR); socio-linguistic facets of contemporary literary language.
Prerequisite: One of German 22.212*, 22.312, 22.340*, 22.341*, 22.430 or permission.
Evening division: Three hours a week.
Jutta Goheen

German 22.430

Medieval Language and Literature

Detailed linguistic and stylistic examination of representative examples of "Minnesang" and of the popular and courtly epic.
Prerequisite: German 22.250 or permission.
Not offered 1977-78.

German 22.451*

Goethe I

A detailed study of *Faust*; complementary selections from other writings by Goethe.
Prerequisite: German 22.250 or permission.
Not offered 1977-78.

German 22.452*

Goethe II

Selected topic from Goethe's later work.
Prerequisite: German 22.250 or permission.
Not offered 1977-78.

German 22.460

German Romanticism

The intellectual and cultural foundations of German Romanticism and its principal literary manifestations in the lyric, the drama and the novel.
Prerequisite: German 22.250 or permission.
Not offered 1977-78.

German 22.470

Seminar on a Literary or Linguistic Topic

Prerequisite: Permission.
Not offered 1977-78.

German 22.471*

Seminar on a Selected Topic

Romantic prose: Examples of the romantic novel and short story from Friedrich Schlegel to Eichendorff; the prose narrative as a vehicle for the propagation of the new ways of thinking and feeling of the period; experimental and traditional structures; the use of verse in romantic prose.
Prerequisite: Permission.
Day division, First term: Three hours a week.
Robert Gould

German 22.471*

Seminar on a Selected Topic

Büchner and modern drama: Büchner's three surviving plays (especially *Woyzeck*) and their place in the history of German drama, with particular reference to Wedekind, Expressionism, and Brecht.

Prerequisite: Permission.

Day division, Second term: Three hours a week.

Basil Mogridge

German 22.490*

Tutorial on a Selected Topic

Primarily for Honours students in their final year. A genre, an author or a group of authors will be selected; methods of literary criticism are considered.

German 22.491

Tutorial

As above, but offered for full-course credit with a corresponding enlargement of scope and assignments.

German 22.499

Honours Essay

An option for final-year Honours students.

Graduate Courses Open to Undergraduate Students

The attention of Honours students is drawn to the courses offered by the Comparative Literature Committee; and to the following 500 level courses offered in the M.A. program of the Department of German.

German

22.544F1 Genres in German Literature

22.563F1 Period Studies

22.564W1 Period Studies

22.574W1 Individual Authors

Courses Planned for Summer School and Evening Division, 1977-79

Summer 1977

22.015, 22.100.

Evening Division 1977-78

22.015, 22.016, 22.100, 22.201*, 22.202*, 22.250, 22.341*, 22.350*, 22.412.

Summer 1978

22.015, 22.100, 22.471*.

Evening Division 1978-79

22.015, 22.016, 22.100, 22.201*, 22.202*, 22.212*, 22.302*.

Officers of Instruction

Chairman

John W. Strong

Co-ordinator, St. Patrick's College

J. Greatrex

Professor Emeritus

R.G. Glover

Professors

J.G. Bellamy

Desmond G. Bowen

G. Peter Browne

David Chung (*St. Patrick's College*)

Gordon S. Couse

R.C. Elwood

David M.L. Farr

Michael G. Fry

J.K. Johnson (*St. Patrick's College*)

H. A. MacDougall (*St. Patrick's College*)

S.R. Mealing

H. Blair Neatby

John W. Strong

Michael J. Sydenham

Sydney F. Wise

Associate Professors

Marilyn J. Barber

B. Carman Bickerton

J.L. Black (*Visiting Professor*)

R.T. Clippingdale

J. Nicoll Cooper

Robert B. Goheen

J. Greatrex (*St. Patrick's College*)

Naomi E.S. Griffiths

T. Murray Hunter

R.A. Jones

Edward R. Kantowicz

Peter J. King

Paul C. Merkley (*St. Patrick's College*)

R.E. Reynolds

Assistant Professors

E. Peter Fitzgerald

G.F. Goodwin

Deborah G. Gorham (*St. Patrick's College*)

F.J.K. Griezic (*St. Patrick's College*)

John LaGrand

Mark Phillips

John H. Taylor

Sessional Lecturers

G.N. Hillmer

D.A. Muise

D.C. Savage

Programs of Study

Every student who elects History as a Major or Honours subject, or who undertakes graduate work in History, will plan the whole of his program in consultation with a departmental program adviser whose approval is necessary each year before registration is complete. Departmental advisers for students in History programs are:

Major students, E.R. Kantowicz

Honours students, G.S. Couse and M.J. Sydenham

Graduate students, R.T. Clippingdale, J.N. Cooper

Major Programs

Major in History

1. Students Majoring in History are to take a minimum of six History courses, as follows:

(a) One 100-level course, to be taken in the First year;
(b) At least two 200-level courses, to be completed by the end of the Second year. A Third 200-level course is usually recommended;

(c) At least two 300-level courses, to be taken in the Third year. The Department may permit a third 300-level course in lieu of a third 200-level course.

2. Of the six courses required (at the 100, 200 and 300 levels) either at least one from each field or two from each of two fields shall be taken, and not more than two shall be taken entirely in the history of any one country. The fields are:

(a) medieval and early modern Europe

(b) modern Europe

(c) North America

In order to continue in the Major program, a student must attain a grade of C- or better in a First year History course and must maintain at least a C- average over all History courses taken.

Combined Majors

For Major programs combining History with another subject, the general rule is that they must include at least four courses in History, no more than one of these four at the 100 level and at least one of them at the 300 level.

Honours Programs

Honours in History

1. The Honours program requires at least ten or eleven courses in History, as follows:

(a) One 100-level course, to be taken as part of the First year;

(b) Two 200-level courses, to be taken in the Second year;

(c) Three 300-level courses, to be taken in the Third year and to include History 24.388;

(d) Four or five 400-level courses, to be taken in the Fourth year and to include History 24.490 (Honours Comprehensive) and History 24.491 (Directed Studies).

2. Honours students in the Fourth year will take five courses altogether, all at the 400 level, one of which may be outside the Department.

Normally, not more than two 400-level History seminars may be taken in any one of the following five areas: (1) medieval and early modern Europe (2) modern western Europe (3) Russia and eastern Europe (4) Great Britain and the Commonwealth (5) North America. A student may elect to present a research essay (History 24.499) in place of any two other 400-level courses except History 24.490 and History 24.491.

Students will be required to show a proficient reading knowledge of French. A student may substitute another language with the permission of the Department if it is more appropriate to his program.

Students intending to enter the Honours program are advised to do so as early as their intentions are settled, and not later than the beginning of the Third year. All students who meet the general University Honours requirements, and who have at least second class standing in History, will be admitted to, and permitted to continue in the Honours program. Students with third class standing in History will be given individual consideration on application to the Department. An Honours student must have his program approved at registration by a departmental adviser. Honours students in good standing, whose course patterns meet the regulations in *Major in History*, paragraph 2, may revert to the Major program with a B.A. at the end of the Third year. Students who have not taken History 24.388 in their Third year will require the permission of the department to enter the Fourth year. In determining the class of an Honours candidate's degree, the Department will average his grades on all History courses, those on the 400-level courses being given double weight.

There is no limit to the number of qualified students admitted to the Fourth year of the Honours program; however, allocation of students among the 400-level seminars will be determined by the Department after consultation with individual students. For details consult the Honours advisers. This regulation will not be applied in such a way as to limit a student's opportunity to complete his requirements prescribed for a degree in history.

Combined honours Programs

For Honours programs combining History with another subject, the general rule is that they must include at least six courses in History; no more than one of these six may be taken at the 100 level; one 400-level seminar and either History 24.490 (Honours Comprehensive) or History 24.491 (Directed Studies) are to be included.

Classical Civilization Courses

The History Department cross-lists several courses offered in Classical Civilization by the Department of Classics.

No more than two classical civilization courses may be included in the six courses required for the Major program; no more than three in the Honours program.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Prerequisites

Unless otherwise stated, the prerequisite for any 300-level course is:

1. A 200-level course, preferably in an appropriate field (for fields, see *Major in History*, paragraph 2); or
2. Permission of the Department.

The prerequisite for any 400-level course is:

1. Two 300-level courses with one course at either the Second or Third year level in an appropriate field; or
2. Permission of the Department.

Courses Offered

History 24.014

The Origins of North American Society

An examination of the manner and extent to which institutions and social structures transplanted from Europe developed new patterns from the seventeenth to the nineteenth centuries and became characteristically North American.

Day and Evening divisions: Three hours a week.

B.C. Bickerton, S.R. Mealing

Note: Students who elect History as their Major or Honours subjects are required to take either History 24.105 or 24.112 or 24.113 or 24.114.

History 24.105

Civilization during the Middle Ages

An introduction to the development of the civilization which characterized the West from the decline of the Roman Empire until the Renaissance.

Day division: Three hours a week.

J.G. Bellamy, J.J. LaGrand, R.E. Reynolds

History 24.112

The Rise of Modern Europe

This course surveys European history from the fifteenth to the early twentieth century. Major items include the urban environment of the Renaissance, the expansion

of Europe, the organization of state power, révolution, nationalism versus internationalism.

Day division: Three hours a week.

N.E.S. Griffiths (co-ordinator), E.P. Fitzgerald, M. Phillips

History 24.113

European History

A political and diplomatic history of Europe from 1715 to 1950.

Evening division: Three hours a week.

E.P. Fitzgerald, M.J. Sydenham

History 24.114

The Origins of North American Society

See History 24.014.

History 24.205

England during the Middle Ages

A study concentrating on the political development of medieval England and her French possessions, A.D. 1066-1485.

Day division: Three hours a week.

J.G. Bellamy

History 24.206

France and Germany during the Middle Ages

A study concentrating on the political development of the Merovingian and Carolingian Kingdoms, the Holy Roman Empire, and Capetian France.

Offered at St. Patrick's College.

Evening division: Three hours a week.

J. Greatrex, J.J. LaGrand

History 24.207

Social and Economic History of the Middle Ages

A study of the economic development and social history of medieval Europe. Topics will include the commercial revolution, feudalism, chivalry, and the crusades.

Day division: Three hours a week.

J.J. LaGrand

History 24.214

Church, State and Society since the Renaissance

A study of the role of the Christian church during times of radical political, social and cultural change. (Also listed as Religion 34.214.)

Offered at St. Patrick's College.

Evening division: Three hours a week.

D.G. Bowen

History 24.215

Early Modern Europe: from Dante to Descartes

Themes in the social, political and intellectual history of early modern Europe. Lectures and readings on politics and society will be organized in units structured around a series of major European intellectuals. Representative topics include urban life; commerce and communications; science and exploration; magic and religion; new styles in art, literature and social thought.

Day division: Three hours a week.

M. Phillips

History 24.216

Liberty and Authority in Modern France, 1770-1970

A study of the causes and character of the French Revolution and of the influence of both revolutionary and the counter-revolutionary traditions in the history of nineteenth and twentieth century France. A reading knowledge of French will be helpful, but is not a prerequisite for the course.

Evening division: Three hours a week.

E.P. Fitzgerald, M.J. Sydenham

History 24.218*

The Enlightenment

A study of the eighteenth-century western European thought as manifested by the arts and letters and as reflecting or affecting the social and institutional milieu.

Day division, First term: Three hours a week.

G.S. Couse

History 24.219*

The Counter-Enlightenment

A study of the western European reaction against the Enlightenment between about 1750 and 1850 as manifested by the arts and letters and as related to contemporary events and circumstances.

Prerequisite: History 24.218* or permission of the instructor.

Day division, Second term: Three hours a week.

G.S. Couse

History 24.222

East Asian Civilization

Basic characteristics of traditional East Asian civilization in China, Korea and Japan. Main patterns of the Asian responses which emerged under the impact of the expanding West at the dawn of modern Asia from the seventeenth century to the early nineteenth century.

Day division: Three hours a week.

D. Chung

History 24.230

Canada from 1763

The political, economic and social development of the British North American colonies of 1763 to the Canada of today.

Day and Evening divisions: Three hours a week.

M.J. Barber, R.T. Clippingdale, H.B. Neatby, J.H. Taylor, S.F. Wise

History 24.235

The Expansion of Europe

A comparative analysis of the colonial and commercial expansion of Europe to the late eighteenth century, with special reference to the First British Empire.

Not offered 1977-78.

History 24.240

History of the United States of America

This course will consider the history of the United States in the national period, emphasizing political and economic factors.

Day division: Three hours a week.

G.F. Goodwin, E.R. Kantowicz

Evening division offered at St. Patrick's College.

History 24.255

Early Modern Europe: People, Land and Institutions 1300-1700

An introduction to early modern social history. The course will investigate how people used particular ideas and methods of organization to define and regulate their society. The village and the monarchy will be of equal concern. England and France will be the areas of geographic concentration.

Day division: Three hours a week.

J.N. Cooper, R.B. Goheen, N.E.S. Griffiths

History 24.256

Comparative History of Great Britain and France

A comparative study of political and social developments in two major countries of Western Europe, from the mid-seventeenth to the nineteenth century.

Not offered 1977-78.

History 24.260

History of Russia and the U.S.S.R.

A survey of Russian history from Kiev to the present, with emphasis on the period from the reign of Peter the Great to the Revolution of 1917.

Day division: Three hours a week.

J.L. Black

History 24.275

History of Africa

An introduction to the history of Africa. The first half will be devoted to the period prior to European colonization with emphasis on West African states and empires; the second half will deal with resistance to colonization, European colonial rule, independence and liberation movements.

Day division: Three hours a week.

D.C. Savage

History 24.280

Problems in the Diplomacy of the Great Powers 1789-1890

A study of selected problems in international relations from the beginning of the French Revolution to the fall of Bismarck.

Not offered 1977-78.

History 24.281

War in the Modern World: Renaissance to Nuclear Age

A study of changing concepts of warfare in the western world, and their political, economic and technological implications, from the sixteenth century to 1945.

Day division: Three hours a week.

T.M. Hunter

History 24.290

Greece in the Ancient World

Offered in the Department of Classics as Classical Civilization 13.290.

History 24.291

Rome in the Ancient World

Offered in the Department of Classics as Classical Civilization 13.291.

History 24.301

The Hellenistic Age 323-31 B.C.

Offered in the Department of Classics as Classical Civilization 13.301.

History 24.302

Late Roman History 285-500 A.D.

Offered in the Department of Classics as Classical Civilization 13.302.

History 24.304

Women in Antiquity

Offered in the Department of Classics as Classical Civilization 13.344.

See note on "Classical Civilization courses" p. 104.

History 24.305

Cultural and Intellectual History of the Middle Ages

A pro-seminar on topics in the cultural and intellectual history of the Middle Ages from late patristic antiquity to the fourteenth century. Among the topics studied will be medieval bookmaking, monasteries, libraries, universities, literature, writing of history, theology, philosophy and liturgy. (Also listed as Religion 34.305.)

Day division: Three hours a week.

R.E. Reynolds

History 24.310

Problems in the History of Ideas

A study of western intellectual development since the Renaissance which considers such movements as humanism, the Enlightenment, romanticism, Darwinism and contemporary ideologies.

Offered at St. Patrick's College.

Day division: Three hours a week.

D.G. Bowen

History 24.312*

The Italian Renaissance

Studies in political, social and intellectual history, concentrating on Florence and Venice. Readings will be in both primary and secondary works. Some representative themes are: a comparative history of Florence and Venice; utopian literature; revivals of antiquity.

Evening division, First term: Three hours a week.

M. Phillips

History 24.313*

Historical Writing and Political Thought in Renaissance and Reformation Europe

This course will examine a series of political and historical thinkers in relation to early modern society. Representative figures include Marsilius, Machiavelli, Guicciardini, Botero, Bodin, Campanella.

Prerequisite: History 24.215, or permission of the instructor.

Evening division, Second term: Three hours a week.

M. Phillips

History 24.315

European Economic History

Offered in the Department of Economics as Economics 43.315.

History 24.316

Revolutionary and Napoleonic France, 1774-1821

Studies in the political history of France from the final years of the Ancien Régime to the beginning of the Restoration. These will include consideration of the impact of the Revolution and the Empire upon Britain and Europe. A reading knowledge of French will be helpful, but is not a prerequisite for the course.

Day division: Three hours a week.

M.J. Sydenham

History 24.317

Modern France, 1898-1969: from Dreyfus to De Gaulle

Studies in the political history of modern France, and of French foreign and colonial policy, from the turn of the century to the establishment of the Fifth Republic. Readings and discussions will focus on the patterns of conflict which emerged during such times of national crisis as the Dreyfus affair, the collapse of 1940, the Algerian War and the student revolt of 1968. A reading knowledge of French will be helpful, but is not a prerequisite for the course.

Not offered 1977-78.

History 24.318

Modern Germany, 1848-1945: from Bismarck to Hitler

A survey of Germany and the 'German problem' in Europe from the revolutions of 1848 to the end of the Second World War, with emphasis on the period since 1890. Major themes will include the force of nationalism, the persistence of authoritarian institutions and values, the failure of democracy, and the rise of the Nazi regime.

Evening division: Three hours a week.

E.P. Fitzgerald

History 24.325

The Economic Development of Canada

Offered in the Department of Economics as Economics 43.325.

History 24.330

Social History of Canada

Studies in the structure and values of Canadian societies from the eighteenth to the early twentieth century, with special reference to the effects of urbanization. First term: Themes and readings in Canadian social history. Second term: Research seminars in Canadian social history.

Day and Evening divisions: Three hours a week.

S.R. Mealing, J.H. Taylor, S.F. Wise

History 24.331

French Canada since Confederation

A political and intellectual history of French Canada with emphasis on the development of French Canadian nationalism. Students will be expected to read both French and English sources.

Day division: Three hours a week.

H.B. Neatby

History 24.332

The Maritime Provinces 1750-1900

The social, religious, ethnic and economic background of the politics of the Maritime Provinces.

Evening division: Three hours a week.

D.A. Muise

History 24.334

Canada-United States Relations

An examination of Canadian-American relations in the political, diplomatic and economic fields, with particular attention to the relationship in the twentieth century.

Day division: Three hours a week.

D.M.L. Farr

History 24.336

Canadian External Relations

The development of Canadian attitudes and policies toward external affairs in the years since 1867.

Evening division: Three hours a week.

G.N. Hillmer

History 24.337

The Emergence of the Political Tradition in Canada

An examination of Canadian politics (politicians, parties, ideas and social context) from the late eighteenth century to the present. Special emphasis will be given to the post-Confederation period.

Day division: Three hours a week.

R.T. Clippingdale

History 24.338*

Canadian Immigration and Settlement

A study of immigration to Canada and of the adaptation of immigrants to their new environment from the beginning of the nineteenth century to the Second World War.

Day division, First term: Three hours a week.

M.J. Barber

History 24.343*

The Progressive Era in the United States

A survey of politics and social history from 1896-1920. Special emphasis will be given to the problems of industrialization, race and ethnicity during the period. Not offered 1977-78.

History 24.344*

Contemporary America: 1940 to the Present

This course will examine the social and political development of the United States from the Second World War in the overall context of the twentieth century. The genesis of contemporary issues in the 1920's and 1930's will be considered. Not offered 1977-78.

History 24.345*

American Urban History

An introduction to the major patterns of urban growth and development in the United States. Particular cities are used as case studies, but an attempt is made to generalize about the functions, shapes, and problems of cities. The major emphasis is on the nineteenth century. Day division, First term: Three hours a week.

E.R. Kantowicz

History 24.346*

American Immigration and Ethnic Groups

An introduction to the major currents of both urban and rural immigration to the United States and the formation of distinct ethnic groups in American society. The major emphasis is on the period of unrestricted immigration from 1820 to 1921.

Day division, Second term: Three hours a week.

E.R. Kantowicz

History 24.347*

The Negro in the United States

A study of the Negro in the United States, which will concentrate on his experience under slavery and the recurring themes of integration and separatism after emancipation.

Day division, First term: Three hours a week.

G.F. Goodwin

History 24.348

American Intellectual History

An examination of American thought from the colonial period to the twentieth century, with emphasis on political, social and religious ideas and their relation to American society and institutions.

Day division: Three hours a week.

P.J. King

History 24.350

British Constitutional History

A survey of the development of the British constitution. Not offered 1977-78.

History 24.358

The Political Framework of Social England From the Sixteenth Through the Nineteenth Centuries

An enquiry into some major political institutions in England as they reflect social change and stability.

Day division: Three hours a week.

R.B. Goheen, J.N. Cooper

History 24.360

History of the U.S.S.R.

A political and diplomatic history of Soviet Russia from 1917 to the present.

Day division: Three hours a week.

J.L. Black

History 24.361*

The Russian Empire

The expansion and development of the Russian Empire from the fourteenth century to 1917, with emphasis on Siberia and Central Asia.

Not offered 1977-78.

History 24.365

History of Eastern Europe

A survey of Eastern European history from the early eighteenth century to the present with emphasis on the histories of Poland, Czechoslovakia and Hungary.

Not offered 1977-78.

History 24.366*

Modern East Central Europe

A study of the political and diplomatic history of East Central Europe since 1848 with emphasis on Poland and Czechoslovakia.

Not offered 1977-78.

History 24.370

The Rise and Fall of the British Empire

The evolution of the British Empire following the American Revolution analysing the forces behind its establishment, emphasizing political, economic and social factors and concluding with its transformation into the modern Commonwealth.

Day division: Three hours a week.

G.P. Browne

History 24.377

The Irish in Modern History: A Problem in Historical Ethnicism

A study of the development of the two peoples of Ireland, Anglo-Irish relations since Elizabethan times, the influence of the diaspora Irish in home affairs, and the contribution of the Irish to developments in England, Canada, the United States and other areas.

Day division: Three hours a week.

D.G. Bowen

History 24.380

Diplomacy of the Great Powers, 1890-1945

A study of the relations of the great powers in the years before 1914; wartime diplomacy and the peacemaking of 1919-23; inter-war diplomacy and the origins of the

Second World War; and the relations of the powers 1939-45.

Day division: Three hours a week.

Norman A. Rose

History 24.381

Britain and Europe in the Nineteenth Century

A study of British foreign policy, its aims and motives, from the end of the Napoleonic War to the opening of the First World War.

Not offered 1977-78.

History 24.385*

Modern China

A political history of China from the early nineteenth century to the present with emphasis on Chinese reaction to western impact.

Not offered 1977-78.

History 24.386*

Modern Japan

The political, social and economic development of Japan during the Meiji, Taisho and Showa periods.

Not offered 1977-78.

History 24.388

Historical Theory and Method

An examination of questions concerning the nature and value of historical enquiry and the meaning of the course of history.

Day and Evening divisions: Three hours a week.

G.S. Couse, P.C. Merkley

History 24.405

Society, Law, and Politics in the Middle Ages

A seminar on one or more of the following topics: crime and criminal law in medieval England, canon law, ecclesio-political theory. While not prerequisites, it is hoped that students will have a knowledge of Latin and will have taken one of Law 51.100, 51.386*, or Political Science 47.280.

Day division: Three hours a week.

J.G. Bellamy J.J. LaGrand

History 24.416

The French Revolution

A seminar in selected problems in the history and interpretation of the French Revolution, with particular reference to the development of different concepts of democracy.

Not offered 1977-78.

History 24.417

Modern France

A seminar concerned with the political, social and diplomatic history of France since the late nineteenth century.

Not offered 1977-78.

History 24.429

Selected Problems in Greek and Roman History

Special topic for 1977-78 is "The Later Roman Empire". Offered in the Department of Classics as Classical Civilization 13.429. Open to Third and Fourth year History students.

R.C. Blockley

See note on "Classical Civilization courses" p. 104.

History 24.431

French Colonial Society

A seminar and tutorial in which the character of settlement and society in the French colonies in North America will be examined and compared with examples of other North American colonial societies.

Day division: Three hours a week.

B.C. Bickerton

History 24.432

Seminar on Acadian History

This seminar will examine the establishment of European settlement in "Acadie" or Nova Scotia, the development of Acadian traditions pre and post 1755, including the Acadian reaction to exile, emphasizing community development and Acadian social characteristics and offering the possibility of comparative studies with other settlements both in Europe and North America. Considerable emphasis will be placed upon the use of documentary material.

Evening division: Three hours a week.

N.E.S. Griffiths

History 24.433

Selected Problems in the Social and Political Development of Twentieth Century Canada

A seminar on problems arising from the impact on Canadian society of rapid immigration, the two world wars and the great depression.

Day division: Three hours a week.

M.J. Barber

History 24.434

Aspects of Canadian Nationalism, 1867-1918

A seminar on selected topics in the politics and thought of Canadian nationalism in the first half of the post-Confederation period.

Not offered 1977-78.

History 24.435

Confederation

A seminar on the social, political, and economic bases of the Confederation movement, on the achievement of Confederation and on the constitutional problems arising from the British North America Act.

Evening division: Three hours a week.

G.P. Browne

History 24.436

Old Ontario

A seminar on the social, economic and political development of Ontario in the eighteenth and nineteenth centuries.

Day division: Three hours a week.

J.K. Johnson

History 24.438

Selected Problems in Canadian Labour History, 1873-1956

A seminar studying the organization of the working class in industrial history.

Not offered 1977-78.

History 24.440

A Selected Period in United States History

A seminar which considers the relationship between the political, social, economic and intellectual aspects of one of the following periods: (a) The early national periods, 1783-1816; (b) the age of Jackson, 1824-46; (c) the progressive era, 1896-1912; (d) the interwar years, 1920-41. For 1977-78 the period will be: (d).

Day division: Three hours a week.

G.F. Goodwin

History 24.441

Selected Problems in American History

A seminar in which selected topics in the history of the United States during the nineteenth and twentieth centuries will be considered.

Not offered 1977-78.

History 24.457

Selected Problems in Tudor and Stuart History

A seminar concentrating on aspects of English group and community organization and power in the Tudor and early Stuart period.

Day division: Three hours a week.

R.B. Goheen

History 24.458

Selected Problems in Nineteenth Century British History

A seminar on mid nineteenth century social reform and its social background.

Not offered 1977-78.

History 24.459

The Family and Sexuality in the Victorian Age

A seminar in which evolving definitions of the family and of male and female sexuality during the period in question will be examined. Special attention will be given to analyzing the connections between these changing definitions and such factors as changes in economic structure, urbanization, and changes in women's position in society. Although the main focus will be on Britain, material from North America and Europe will be used for comparative purposes.

Day division: Three hours a week.

D.G. Gorham

History 24.460

Selected Problems in Russian History

A seminar on selected problems relating to the expansion and decline of Imperial Russia.

Not offered 1977-78.

History 24.461

Selected Problems in Soviet History

A seminar on selected problems relating to the establishment and subsequent course of the Soviet Union.

Day division: Three hours a week.

J.W. Strong

History 24.470

Selected Problems in Colonial History

A seminar concerned with political, economic, social, strategic and humanitarian developments in several colonies. Periods, area and aspects may vary but in general the British colonies since 1763, principally in North America, Africa and Australasia, will be compared and contrasted on the basis of primary material.

Prerequisite: History 24.370 or permission of the instructor.

Not offered 1977-78.

History 24.480

Selected Problems in the Diplomacy of the Great Powers, 1906-39

A seminar on selected problems in diplomatic history from the origins of the First World War.

Evening division: Three hours a week.

Norman A. Rose

History 24.481

Diplomatic and Strategic Problems of the Second World War

A seminar on problems selected from major politico-strategic issues of the outbreak, conduct and aftermath of the Second World War.

Day division: Three hours a week.

T.M. Hunter

History 24.490

Honours Comprehensive

Required of candidates for Honours in History, this will be a written examination in a special field with general questions relating to historical thought.

Day and Evening divisions.

Members of the Department

History 24.491

Directed Studies

A course required of candidates for Honours in History in their Fourth year. It will consist of supervised reading and reports in an area of history.

Day and Evening divisions.

Members of the Department

History 24.499

Honours Research Essay

Open to candidates for Honours in History in their Fourth year. The subject for research will be settled in consultation with the Department and a supervisor will be assigned. The candidate will be orally examined upon his essay after presentation. This course carries double credit.

Day division.

Members of the Department

Courses Offered at St. Patrick's College

History

24.101 Introduction to Modern History

24.206 France and Germany during the Middle Ages

24.214 Church, State and Society since the Renaissance

24.240B History of the United States

24.304 Women in Antiquity

24.308 Cathedral and Town

24.310 Problems in the history of Ideas

24.325 Canadian Economic History

24.354 Women and Society in Western Europe and North America, 1700-1970

Courses Planned for Summer School and Evening Division, 1977-78

Summer Sessions

Courses regularly offered include 24.105 or 24.112 or 24.113; 24.230 and at least one other 200-level course; 24.388* and at least one other 300-level course; a Fourth-year Honours seminar.

Evening Divisions

24.113, 24.230, 24.240, 24.388*;

additional courses at the 200 and 300 level will also be offered, and will be as representative as possible of the fields required for the Bachelor of Arts degree; at least two 400-level seminars.

*24.388 will normally be given in both Evening division and Summer sessions. When this is not possible it will be given at least in the Evening division or the following Summer session every year.

Department of Italian

Officers of Instruction

Chairman
R. Larson

Assistant Chairman
Claudia Persi Haines

Associate Professors
M. Ciavolella
R. Larson

Assistant Professors
Claudia Persi Haines
F. Loriggio

Instructor
Giovanna Panico

Supervisors of Majors and Honours
M. Ciavolella, Claudia Persi Haines

General Information

The Department offers Major, Combined Major and Combined Honours programs in Italian. Interested students should consult members of the Department to plan their programs in accordance with existing and expected future courses. The Department endeavours within its limited resources to offer essential courses for these programs annually during the Evening division. All sectioned courses are normally scheduled in the Evening (Italian 26.015, 26.100, 26.105, 26.201*, 26.202*), and three literature courses, one at the 200 level, one at the 300 level and one at the 400 level are normally available annually in the Evening division.

Study Abroad

The Department has established the policy of giving language and civilization courses every summer in Italy. Interested students should contact the Department early in the year for information regarding financial assistance, itinerary, and courses planned.

Major Programs

The requirements for the Major in Italian are a minimum of five courses after Italian 26.100 or equivalent, three of which must be 26.205 and two literature courses at the 300 or 400 level. It is possible as well to take a Combined Major in Italian and another discipline. Requirements of the Department for the Combined Major are four courses in Italian after Italian 26.100, including 26.205 and a 300- or 400-level literature course. Italian 26.210 will be considered a credit as an

Arts option but not a credit towards an Italian program for students enrolled in Major, Combined Major or Combined Honours programs.

Combined Honours Program

Students admitted to Combined Honours programs are required to complete at least twenty credits of which at least six must be in Italian beyond the First-year level. Their programs should include Italian 26.205 and two literature courses at the 300 level and one at the 400 level. An Honours Research Essay is available. Italian 26.491, Special Studies II, a directed reading course, and Italian 26.498 Honours Research Essay are available every year to students who wish to investigate a particular literary genre or topic.

Courses Offered

Italian 26.015

Introduction to Italian

A beginning course designed to give the student the fundamentals of written and spoken Italian. Grammar, reading and oral practice.

Day and Evening divisions: Lectures and laboratory four hours a week.

Italian 26.100

Intermediate Italian

A course intended to consolidate and supplement knowledge of the language and culture acquired in Italian 26.015. Reading of literary texts, composition and oral practice.

Prerequisite: Italian 26.015 or equivalent.

Day and Evening divisions: Lectures and laboratory four hours a week.

Italian 26.105

Intermediate Italian for Dialectofoni

A course designed for students of Italian origin who speak Italian dialects but have had no formal training in standard Italian.

Prerequisites: Permission of the Department.

Day division: Lectures and laboratory four hours a week.

Italian 26.201*

Italian Conversation

Conversation and discussion of general and current problems, including occasional written work.

Prerequisite: Italian 26.100 or permission of the Department.

Day division, First term and Evening division, Second term: Three hours a week.

Italian 26.202*

Italian Composition

A course designed to utilize the achievements attained in Italian 26.100, particularly with the view to enabling students to write fluently in Italian.

Prerequisite: Italian 26.100 or permission of the Department.

Evening division, First term and Day division, Second term: Three hours a week.

Italian 26.205

Introduction to the Study of Italian Literature

This course is designed to introduce the student to Italian literature. Emphasis will be placed on the textual analysis of representative works. Required for Majors and Honours.

Day division: Three hours a week.

F. Loriggio

Italian 26.210

The Italian Heritage: Literature, Arts and Society in Italy from the Thirteenth Century to the Present Time

This course, to be given in English, deals with the literary, artistic and social development of Italy.

Day division: Three hours a week.

M. Ciavolella

Italian 26.220

Background to the Study of Italian Literature

A first-hand introduction to the culture, history and art of Italy. The course, to be given in Italy, will be offered in both Italian and English. The Italian section is designed for students who intend to take courses in a Major or Honours program. Students taking the English section will receive credit as an Arts option.

Italian 26.301*

Advanced Oral Italian

An advanced sequel to Italian 26.201*.

Prerequisites: Italian 26.201*, 26.202*, or permission of the Department.

Evening division, First term: Three hours a week.

Italian 26.302*

Advanced Composition

An advanced sequel to Italian 26.202*.

Prerequisites: Italian 26.201*, 26.202*, 26.301*, or permission of the Department.

Evening division, Second term: Three hours a week.

Italian 26.310

Italian Literature I: From the Thirteenth Century to the End of the Renaissance

This course will trace the development of the genres of Italian literature during the period indicated. Each of the genres, i.e. poetry, *novella*, heroic poem, theatre, will be given separate and extensive attention.

Evening division: Three hours a week.

F. Loriggio

Italian 26.320

Italian Literature II: From the End of the Renaissance to the Twentieth Century

This course will trace the development of the genres of Italian literature during the period indicated. Each of the genres, i.e. poetry, novel, theatre, will be given separate and extensive attention.

Not offered 1977-78.

Italian 26.391

Special Studies I

A course designed to investigate special problems or aspects of Italian literature in greater depth than they are covered in the other literature courses at the 300 level. A variety of topics to be offered on a rotating basis. Topic for 1977-78: *La narrativa verista*.

Day division: Three hours a week.

C.P. Haines

Italian 26.400

Dante

An intensive study of Dante and his age with particular reference to the *Divina Commedia*.

Prerequisites: Italian 26.205, 26.310, or permission of the Department.

Not offered 1977-78.

Italian 26.410

Italian Theatre: From Goldoni to Pirandello

A study of Italian dramatic works with particular emphasis on the theatre reform of Carlo Goldoni and on the theatre of Luigi Pirandello.

Prerequisites: Italian 26.310, 26.320, or permission of the Department.

Not offered 1977-78.

Italian 26.420

Contemporary Italian Novel

A study of selected Italian contemporary novels.

Prerequisite: Italian 26.320, or permission of the Department.

Not offered 1977-78.

Italian 26.430

Twentieth Century Italian Poetry

A study of the most representative contemporary Italian poets.

Prerequisite: Italian 26.320 or permission of the Department.

Not offered 1977-78.

Italian 26.491

Special Studies II

A reading or research course for selected students who wish to investigate a particular literary genre or author in greater depth than they are covered in other courses. Available to Fourth year students only.

Prerequisite: Permission of the Department.

Italian 26.498

Honours Research Essay

Open to candidates for Combined Honours programs in Italian in their Fourth year. The subject for research will be chosen in consultation with the Department and a supervisor will be assigned.

Prerequisite: Permission of the Department.

School of Journalism

For details of programs offered by the School see pp. 63-65.

Courses Offered

Journalism 28.100 and 28.110

Introduction to Human Communication

The act of human communication: how it takes place, in what settings and to what effect. A broad survey course covering such aspects as the verbal and nonverbal ways in which man communicates: general semantics; sense perception; communication in the arts; telecommunication systems; information theory; mass communication; and the role of the mass media in social change. Discussion groups are workshops for projects and for practical exercises in group behaviour.

Journalism 28.100: For Honours students enrolled in the School of Journalism only. Journalism 28.110: For non-majors. Registration for 1977-78 will be limited to 400 students.

Day division: Lectures and discussion groups four hours a week.

Roger Bird, Tom McPhail, Mel Thistle

Journalism 28.101*

Journalism Workshop

A course designed to provide Journalism students with fundamental skills in typing and note-taking. Students normally take Forkner shorthand during one term and typing during the other, unless they are already qualified in one or both skills. The qualification standard is sixty words per minute for shorthand or speed writing and twenty-five words per minute in typing. The course is marked on a pass/fail basis; students are passed as soon as they have demonstrated proficiency in both skills. Students are not permitted to withdraw from this course except with departmental approval, and must have passed the course before entering Journalism 28.320.

Prerequisite: For Journalism Honours students only.

Day and Evening divisions: Workshops four hours a week.

Journalism 28.200

Problems of the Mass Media

An historical and contemporary examination of mass media. Problems including ownership structure, monopoly, government control, freedom and secrecy, responsibility and ethics, public opinion, propaganda, copy-right, censorship in war and peace.

Prerequisite: Journalism 28.100.

Day division: Three hours a week.

Summer 1977, Day division: Lectures ten hours a week.

Peter Johansen, W.H. Kesterton

Journalism 28.210 (28.201)

The Mass Media in Modern Society

An examination in some detail of the historical development and current function of the major mass media, with a view to relating developments to the larger social structure, thus giving an indication of the importance of the media in shaping modern society, with emphasis on Canadian society.

Prerequisite: For non-B.J. Majors only.

Evening division: Lectures and seminars three hours a week.

Alan Frizzell, Jay Weston

Journalism 28.220

Fundamentals of Reporting

The nature of news values; how to recognize and collect news; how to analyse, organize and report it. Interviewing and news gathering. This is mainly a practical course, based on assignments in reporting and writing for newspapers, radio and television.

Prerequisite: For Honours Journalism students who have completed 28.101*, and transfer students.

Texts: Wilson, *Style Guide*; Topolski, *TV is Pictures*.

Day division: Lectures and practical exercises seven hours a week. Enrolment during the Winter session is limited to Journalism Honours students.

Summer 1977, Evening division: Lectures and assignments averaging six hours a week.

Carman Cumming, T.J. Scanlon, Joan Topolski, Phyllis Wilson

Journalism 28.300

The Modern Environment

A seminar course for Journalism students in which a number of texts drawn from the social sciences, literature, journalism and philosophy are considered for their contributions to an understanding of contemporary society and the issues which provide the background to much of contemporary journalism.

Prerequisites: Journalism 28.100 and 28.200, or permission of the School.

Day division: Three hours a week.

Roger Bird, Patrick MacFadden

Journalism 28.301

Media Research

A systematic analysis of selected substantive and methodological traditions in the field of the mass media and related communications research. Students will concurrently undertake an original research project and will be encouraged to focus this research on the Canadian scene.

Prerequisite: Third year standing or higher, Journalism 28.200 or 28.210.

Day division: Three hours a week.

Journalism 28.305*

International Media Systems

This course is concerned with the flow of world news — how it is collected, transmitted, received, selected, edited and distributed; how it informs or inhibits our views of the world around us. It examines the

relationship and dependence of Canadian media on regional and international institutions and systems. It will examine such items as media systems; the role of international news agencies; the role of global telecommunication systems; the foreign news-gathering operations of national radio and television networks, and the inter-network arrangements for news distribution; the role of supranational media institutions such as UNESCO, the International Press Institute, the Inter-American Press Association and the International Organization of Journalists; the role of regional distribution agencies such as Intervision, Eurovision, European Broadcasting Union, Asian Broadcasting Union, etc.

Prerequisite: One of Journalism 28.100, 28.110, 28.200, 28.210 or permission of the School.

Brian Taylor

Journalism 28.306*

Comparative Media Studies

This course is concerned with comparisons of media content. Comparisons may be cross-cultural in nature (i.e. comparisons of English and French-Canadian television news), cross-media (i.e. comparisons of radio and print coverage of the same event), cross-national (i.e. comparisons of daily newspaper coverage of the same events in various English-speaking countries), or a mixture of these. There may also be comparisons over time. Some time will be spent examining critically and employing research tools and methods used in such studies.

Prerequisite: One of Journalism 28.100, 28.110, 28.200, 28.210 or permission of the School.

Brian Taylor

Journalism 28.310

Advanced Studies of the Mass Media

An advanced analysis of theories of mass communication as they relate to and are appropriate for understanding contemporary mass communication institutions and developing technologies. Under investigation will be such areas as the processes and social impact of regulatory agencies, computer satellite communication systems, cable and broadcast television networks.

Prerequisite: One of Journalism 28.100, 28.110, 28.200, 28.210 or permission of the instructor.

Day division: Three hours a week.

Tom McPhail

Journalism 28.320

Interpretative Reporting and Editing

The reporting of public affairs for newspapers, radio and television. The background story. Interpretation. The role of the editor. The editor and the law. Management problems and policies.

Prerequisite: Journalism 28.101* and 28.220.

Day division: Day-long seminar once a week.

George Frajkor, Murray Goldblatt, T.J. Scanlon, Marvin Schiff

Journalism 28.321*

Career Seminars

An opportunity for the student to specialize by doing work in such areas as television, radio, magazines, public relations, creative writing, editorial writing, freelancing, the film, or reporting in the French language. Certain of these specialties may not be offered in a given year.

Prerequisite: For Third year and one-year B.J. students only.

Day division: Annually, as required; two hours alternate weeks all year.

Elspeth Chisolm, Cameron Graham, Ted Grant, Sarah Jennings, Brian Taylor

Journalism 28.333

The Motion Picture: The Development of a Modern Medium

An examination of the motion picture as an historical document, which reflects social, intellectual and cultural development of the twentieth century. Although the emphasis will be on films, students will be required to read widely in other sources.

Prerequisite: For Third and Fourth year students, or by special permission of the instructor.

Day division: Classroom discussion and showings four hours a week.

Robert Blackwood, Patrick MacFadden

Journalism 28.351*

Communications Law I

This course is concerned with restrictions on freedom of expression in Canada. Specific topics for examination will include: freedom of speech and press; privileged statements; pre-trial publicity; copyright; sedition; libel and slander; defamation; contempt of court; obscenity; censorship. (Also offered in the Department of Law as Law 51.351*.)

Prerequisite: Permission of the School.

Day division, First term: Lectures and discussions three hours a week.

W.H. Kesterton

Journalism 28.352*

Communications Law II

The law as it affects the Canadian broadcasting and communications industry. The primary focus of the course will be on the operations of the Canadian Radio-Television and Telecommunications Commission. Specific topics for examination may include: administrative formulation of policy; multiple, monopoly and foreign ownership; control of program content (violence, obscenity, 'good taste', food and drug commercials, liquor advertising, indirect censorship); controlling program quality; the provision of a right of access to the media; cablevision licensing and control; alternative sanctions. (Also offered in the Department of Law as Law 51.352*.)

Prerequisite: Permission of the School.

Day division, Second term: Lectures and discussion three hours a week.

Journalism 28.400**Basic Issues**

A seminar on leading news topics of the day. Stress will be placed upon intensive investigation and consideration of perennial problems as well as emerging public issues likely to confront the professional journalist.

Prerequisite: Journalism 28.300.

Not offered 1977-78.

Journalism 28.421**Specialized Reporting**

An opportunity for students to specialize by acquiring background and undertaking assignments in all media in various specialized areas, such as science and technology, business and finance, sports, the arts, international affairs, Canadian politics and government, social welfare. Certain of these specialties may not be offered in a given year.

Prerequisite: Journalism 28.320.

Day division: Three hours a week.

Wayne Cheveldayoff, Murray Goldblatt, Patrick MacFadden, Marvin Schiff, David Van Praagh

Journalism 28.434***Media and Society I**

An analysis of communications theory and the development of communications media as influential institutions in western society, with special attention to landmark events in Canada, Britain and the United States. An emphasis will be placed upon current social science research studies as they relate to journalism and communication.

Prerequisite: For students in the one-year program.

G. Stuart Adam

Journalism 28.435***Media and Society II**

An examination of the role and structure of the news media in Canada with special attention to problems of ownership, monopoly, government control, content, censorship and social and political responsibility.

Prerequisite: For students in the one-year program.

Peter Johansen

Journalism 28.440***Media Practices**

A seminar covering techniques of reporting with special focus on news judgment, ethics, interviewing, newsroom organization; the examination of the news channels in such public institutions as the courts, municipal government, public agencies and Parliament.

Prerequisite: For students in the one-year program.

Murray Goldblatt, Robert Rupert

Journalism 28.441***Reporting Laboratory I**

A laboratory course in basic reporting in various media.

Prerequisite: For students in the one-year program.

Journalism 28.442***Reporting Laboratory II**

A laboratory course in advanced reporting in various media.

Prerequisite: For students in the one-year program.

Journalism 28.444***Interpretative Reporting**

An examination of research and writing techniques used in feature and background reporting. Students will research to professional standards the material needed for a series of articles on a subject of their own choosing, normally related to public affairs in the Ottawa area. While the emphasis will be on a print series students may, with permission, work in other media.

Prerequisite: For students in the one-year program.

Journalism 28.445***Editorial Techniques**

Combined seminars and workshops in the problems of copy handling, film handling, headline writing, writing to film, news judgment, bias and balance and general semantics. A theoretical and practical look at the law as it relates directly to media practices with particular attention to laws of contempt, slander, libel and invasion of privacy.

Prerequisite: For students in the one-year program.

Journalism 28.461***Perspective on Modern Society**

A seminar course examining texts from the social sciences, philosophy, literature and journalism for the contribution they make to an understanding of issues facing modern industrial society.

Prerequisite: For students in the one-year program.

Journalism 28.462***Public Issues in Canada**

A seminar course examining literature and other sources in an attempt to understand continuing and emerging political, social and economic problems in contemporary Canada.

Prerequisite: For students in the one-year program.

Journalism 28.490**Honours Tutorial**

The First term will be devoted to an analysis of some of the major achievements of contemporary journalism. Students will be expected to work individually and in groups in presenting research papers. Students will also acquire background and experience in the managerial aspects of print and broadcast journalism. The Second term will be devoted to problems in newspaper, radio, film and television journalism, and in communication research. Students will work in small groups in engaging these problems.

Prerequisite: Journalism 28.320.

Not offered 1977-78.

Journalism 28.498

Honours Research

Students in this course will have to carry out directed research and prepare a project under the supervision of one faculty member. The deadline for completion of the honours research project is May 1. Extensions may be approved at the discretion of the supervisor and research co-ordinator.

Prerequisite: For B.J. Honours students only.*

Day division.

W.H. Kesterton

* Students should refer to general Faculty of Arts regulations regarding submission of Honours Essays, p. 59.

Journalism 28.499

Research Credit

Students will carry out directed research and prepare a project under the supervision of one faculty member. The deadline for completion of the Honours research project is May 1. Extensions may be approved at the discretion of the supervisor and research co-ordinator.

Prerequisite: For students in the one-year program.

Day division.

Officers of Instruction

Chairman
William Cowan

Professor
William Cowan

Associate Professors
Jean-Pierre Paillet
Ian Pringle
Janice Yalden

Assistant Professors
C. Stanley Jones
Elaine Pressman

Instructor
Jara Rakušan

General Information

The Department of Linguistics offers courses leading to Major and Honours degrees in Linguistics. The aim of these courses is to provide the student with the theoretical and methodological bases and procedures for the analysis of language and languages, on both the descriptive and historical levels. In addition to the Introductory course (Linguistics 29.100), there is a core of half courses dealing with special areas within linguistics, such as historical linguistics, semantics, psycholinguistics, sociolinguistics, language typology, language pedagogy and speech science. Advanced courses deal with phonetics, phonology, grammar, and linguistic theory.

The Department also offers Combined Majors and Combined Honours degrees, with Classics, English, French, German, Italian, Philosophy, Psychology, Russian, Sociology-Anthropology, and Spanish.

The Department of Linguistics offers a five-course program leading to a Certificate in the Teaching of English as a Second Language for those students who already have a degree, in either Linguistics or another subject, or who have extensive experience in teaching. The courses include theory and practice in teaching English as a second language, the structure of English, and various optional courses.

The Department also has a section devoted to the teaching of English as a second language, both for groups under contract and for individual students. Interested persons should contact the Department for further details.

Major Programs

To graduate with a Major in Linguistics, students must meet the following requirements:

Linguistics 29.100 (Introduction), 29.301* (Phonetics), 29.302* (Phonology), 29.303* (Language Analysis), 29.304* (Grammatical Analysis), 29.381* (Language Structure), plus three course-credits at the 200 level in Linguistics other than Linguistics 29.220 and 29.225. In addition, all students must have a working knowledge of a modern language other than English, proficiency to be determined by an oral or written test given by the Linguistics Department.

To graduate with a Combined Major in Linguistics, students must meet the following requirements:

Linguistics 29.100 (Introduction), 29.301* (Phonetics), 29.302* (Phonology), 29.303* (Language Analysis), 29.304* (Grammatical Analysis), plus one course-credit at the 200 level in Linguistics other than Linguistics 29.220 and 29.225.

Honours Programs

To graduate with Honours in Linguistics, students must meet the following requirements:

Linguistics 29.100 (Introduction), 29.301* (Phonetics), 29.302* (Phonology), 29.303* (Language Analysis), 29.304* (Grammatical Analysis), 29.381* (Language Structure), 29.401* (Advanced Phonology), 29.402* (Advanced Grammar), 29.409* (Advanced Theory), 29.461* (Experimental Linguistics), plus four course-credits at the 200 level in Linguistics other than Linguistics 29.220 and 29.225. In addition, all students must have a working knowledge of a modern language other than English, proficiency to be determined by an oral or written test given by the Linguistics Department.

To graduate with a Combined Honours in Linguistics, students must meet the following requirements:

Linguistics 29.100 (Introduction), 29.301* (Phonetics), 29.302* (Phonology), 29.303* (Language Analysis), 29.304* (Grammatical Analysis), 29.381* (Language Structure), 29.401* (Advanced Phonology), 29.402* (Advanced Grammar), 29.409* (Advanced Theory), plus one course-credit at the 200 level in Linguistics other than Linguistics 29.220 and 29.225. In addition, all students must have a working knowledge of a modern language other than English, proficiency to be determined by an oral or written test given by the Linguistics Department.

For the Combined Honours in Russian and Linguistics, Translation Option, see the entry for the Department of Russian, p. 142.

Certificate in the Teaching of English as a Second Language

To receive the Certificate in the Teaching of English as a Second Language, students must meet the following requirements:

Linguistics 29.100 (Introduction), 29.220 (TESL), 29.225 (TESL Practicum), 29.285 (Structures of English), plus one optional course-credit chosen from among the following for which the student has the necessary prerequisite: English 18.282 (Canadian Literature), French 20.300 (Grammaire Française), History 24.230 (Canada from 1763), Political Science 47.200 (Canadian Government and Politics), Psychology 49.201* (Research Methods in the Psychology of Learning), Sociology-Anthropology 56.248 (Canadian Society), 56.325* (Ethnic Group Relations); or any course in a modern language other than a literature course. In addition, students in the CTESL Program must be fluent in English, proficiency to be determined by an oral or written test given by the Linguistics Department.

It should be noted that students cannot receive both a B.A. and a Certificate at the same time, nor can courses included in a B.A. or other degree be credited towards the Certificate. If any of the Linguistics courses above are included in the B.A., then the student must choose other courses in Linguistics in consultation with the Department.

Courses Offered

Linguistics 29.100

Introduction to Linguistics

Elementary principles and methods of descriptive analysis of language; phonetics; phonology; morphology; syntax. Survey of other areas of linguistics: historical linguistics, sociolinguistics, psycholinguistics, semantics, applied linguistics.

Day and Evening divisions: Three hours a week.

Linguistics 29.211*

Historical Linguistics

Principles and methods of the historical analysis of languages; the comparative method; internal reconstruction; sound change; rule change; the philological method, problems in historical analysis.

Prerequisite: Linguistics 29.100.

Day division: First term: Three hours a week.

Linguistics 29.220

Teaching English as a Second Language

First and second language learning; contrastive analysis of English and other languages; principles of teaching English to non-native speakers.

Prerequisite or concurrent registration: Linguistics 29.100.

Day division: Three hours a week.

Linguistics 29.223*

Linguistics and the Teaching of Languages

Application of linguistics in teaching second languages; principles of contrastive analysis; survey of current models of language pedagogy.

Prerequisite: Linguistics 29.100.

Not offered 1977-78.

Linguistics 29.225

Practicum in Teaching English as a Second Language

Evaluation of non-native speakers; course material design and execution in the form of classroom teaching and private tutoring of English as a foreign language. Seminar discussion and resolution of linguistic and pedagogical problems encountered in practice.

Prerequisite or concurrent registration: Linguistics 29.220.

Day division: Three hours a week.

Linguistics 29.232*

Semantics

General treatment of structural semantics; minimal distinctive units of content; minimal expressible units of content; semantic structure of discourse. Dynamic phenomena (non-structural) in linguistic interaction. Problems in lexicology; the notion of lexeme; relation between lexical analysis and morphological analysis; the place of the structural approach in lexicology; lexicon and world-knowledge.

Prerequisite: Linguistics 29.100.

Not offered 1977-78.

Linguistics 29.261*

Psycholinguistics

Language performance and language use; the production and perception of language; psychological processes involved in speech performance; the relevance of these questions to linguistic theory.

Prerequisite: Linguistics 29.100.

Day division, First term: Three hours a week.

Linguistics 29.262*

Bases of Speech Science

An examination of some of the fundamentals of voice communication; speech analysis and speech synthesis, including methods of speech transmission, techniques for speech analysis and synthesis, and questions concerning intelligibility.

Prerequisite: Linguistics 29.100.

Day division, Second term: Three hours a week.

Linguistics 29.264*

Speech and Language Problems

An examination of the congenital, developmental and acquired disorders of language, speech and voice; prevalences, types, causes, and effects; related research.

Prerequisite: Linguistics 29.261*.

Day division, Second term: Three hours a week.

Linguistics 29.271*

Sociolinguistics

The place of language within society; bilingual and multilingual communities; language, social mobility, and social stratification; sociolinguistic factors in language change.

Prerequisite: Linguistics 29.100.

Not offered 1977-78.

Linguistics 29.272*

Language Typology

The study of language typology as a classificatory device, universalist hypothesis, and areal feature. Methodology in language typology. The theoretical material is based on a survey of the world's languages and language types.

Prerequisite: Linguistics 29.100.

Not offered 1977-78.

Linguistics 29.285

Structures of English

An introduction to the phonology, morphology, and syntax of English; questions of usage and style, especially in the light of the development of the language and of the kinds of variation of English as a native language. (Also listed as English 18.285.)

Prerequisite or concurrent registration: Linguistics 29.100.

Day division: Three hours a week.

Linguistics 29.301*

Phonetics

Recognition, description, transcription and production of speech sounds; systems of transcription; the nature of the speech-producing mechanism; the acoustics of speech sounds. (Also listed as Anthropology 54.301*.)

Prerequisite: Linguistics 29.100.

Day division, First term: Three hours a week.

Linguistics 29.302*

Phonology

The sound-systems of languages; methods for the analysis and description of phonological structure. The course will concentrate on generative theory with comparisons to other theories. (Also listed as Anthropology 54.302*.)

Prerequisite: Linguistics 29.301*.

Day division, Second term: Three hours a week.

Linguistics 29.303*

Language Analysis

Direction and practice in the analysis of grammatical material, including both morphology and syntax. Models for the description of grammatical regularities. Course work consists principally of practical exercises. (Also listed as Anthropology 54.303*.)

Prerequisite: Linguistics 29.100.

Evening division, First term: Three hours a week.

Linguistics 29.304*

Grammatical Theory

Comparison of major current schools of linguistics. Theories of grammatical structure. The testing of grammatical hypotheses. Grammatical structure and meaning. Course work consists principally of lectures and readings. (Also listed as Anthropology 54.304*.)

Prerequisite: Linguistics 29.303*.

Evening division, Second term: Three hours a week.

Linguistics 29.381*

Language Structure

Intensive analysis of the linguistic structure of a selected language, the structure of which is not currently being offered elsewhere in the University. This course may be taken for credit twice provided a different language is being studied. Language for 1977-78: Eskimo.

Prerequisite: Linguistics 29.100.

Day division, Second term: Two hours a week.

Linguistics 29.390

Independent Study

Research under the supervision of a member of the Department. Projects may be organized on an individual basis, or as a special seminar directed by an instructor. No more than one group project will be offered in any one year. Normally open only to Third and Fourth year students.

Prerequisite: Permission.

Linguistics 29.391*

Independent Study

Research under the supervision of a member of the Department. Projects may be organized on an individual basis, or as a special seminar directed by an instructor. No more than one group project will be offered in any term. Normally available only to Third and Fourth year students.

Prerequisite: Permission.

First term.

Linguistics 29.392*

Independent Study

Research under the supervision of a member of the Department. Projects may be organized on an individual basis, or as a special seminar directed by an instructor. No more than one group project will be offered in any term. Normally available only to Third and Fourth year students.

Prerequisite: Permission.

Second term.

Linguistics 29.401*

Advanced Phonology

A continuation of Linguistics 29.302*. Among topics to be covered: the methodological problems of phonology, the problems of markedness and natural rules, ordering, abstractness, and other current theoretical developments.

Prerequisite: Linguistics 29.301*, 29.302*, 29.303*, 29.304* or permission.

Day division, First term: Three hours a week.

Linguistics 29.402*

Advanced Grammar

A continuation of Linguistics 29.304*. Among topics to be covered: global rules, clause movement, constraints, trace theory, and other current developments in syntactic analysis.

Prerequisite: Linguistics 29.301*, 29.302*, 29.303*, 29.304* or permission.

Day division, Second term: Three hours a week.

Linguistics 29.409*

Seminar in Current Issues in Linguistics

The investigation of a theoretical issue that is currently the subject of controversy in linguistics, the topic being selected each year by the students and faculty.

Prerequisite: Linguistics 29.301*, 29.302*, 29.303*, 29.304* or permission.

Day division, Second term: Three hours a week.

Linguistics 29.461*

Seminar in Experimental Linguistics

Experimental phonetics; the investigation of linguistic performance; the testing of propositions derived from the theory of linguistic competence.

Prerequisite: Linguistics 29.301*, 29.302*, 29.303*, 29.304* or permission.

Day division, First term: Three hours a week.

Linguistics 29.490

Tutorial in Linguistics

A course designed to permit a student to pursue his interests in a selected area of linguistics. The student prepares papers as a basis for discussion with his tutor. The topic of study must have the prior approval of the tutor and the Department. The course is available only to Fourth year Honours students, and may be taken only once.

Prerequisite: Permission.

Linguistics 29.491*

Tutorial in Linguistics

A course designed to permit a student to pursue his interests in a selected area of linguistics. The student prepares papers as a basis for discussion with his tutor. The topic of study must have the prior approval of the tutor and the Department. The course is available only to Fourth year Honours students, and may be taken only once.

Prerequisite: Permission.

First term.

Linguistics 29.492*

Tutorial in Linguistics

A course designed to permit a student to pursue his interests in a selected area of linguistics. The student prepares papers as a basis for discussion with his tutor. The topic of study must have the prior approval of the tutor and the Department. The course is available only to Fourth year Honours students, and may be taken only once.

Prerequisite: Permission.

Second term.

Officers of Instruction

Chairman

John Churchill

Associate Chairman

David Piper

Professor

John Churchill

Associate Professor

Alan Gillmor

Assistant Professors

Bryan Gillingham

David Piper

Adjunct Professors

Roxane Carlisle

Helmut Kallmann (*National Library of Canada*)

Sessional Lecturers

Ross Pratt

Ann Schau

Jean Trevelyan

Demonstrators

Barbara Agnew

David Therriault

Instrumental and Vocal Instructors

Philip Adamson (*piano*)

Nina Alexandor (*cello*)

Nat Battersby (*horn*)

Mona Bernardi (*voice*)

Gerald Corey (*bassoon*)

Jewell Couch (*piano*)

David Currie (*double bass*)

Barbara Gaizauskas (*recorder, piano*)

David Galbraith (*voice*)

Netta Gale (*piano*)

Veronica Goodwin (*oboe and cor anglais*)

Godfrey Hewitt (*organ*)

Edward Hounsell (*double bass*)

Drummond Hudson (*trombone*)

David Johnstone (*guitar*)

Joan Milkson (*violin*)

Barbara Ross (*voice*)

Charlotte Sheng (*piano*)

Douglas Walker (*flute*)

James Wegg (*clarinet*)

Irene Woodburn-Wright (*piano*)

General Information

The Department offers courses leading to both Major and Honours degrees in Music. The purpose of these courses is not principally to train students in the performing aspects of the subject (although active participation in choral and instrumental groups will be strongly recommended and half courses are given in applied music for Honours and Majors as adjuncts to academic study) but rather to promote an intellectual and aesthetic understanding of music as an expression of human cultural activity. The study of musical history and of the techniques and materials of musical creation will form the basis of all study. All students will be encouraged to examine the meanings and motivations of the art and to develop their speculative and critical responses to it in both historical and contemporary contexts.

In addition to its undergraduate degrees, the Department provides courses of study leading to a Master of Arts program in Canadian Music either in historical musicology or in ethnomusicology, offered through the Institute of Canadian Studies.

Students entering First year who plan to take a Major or Honours in Music are advised to consult the Department as early as possible to plan their courses. General requirements of the Faculty of Arts should also be read carefully, and any students in Music who wish to take courses from other Departments must be sure to consult those Departments to ensure that all necessary prerequisites are fulfilled.

Major Programs

1. The Major program in Music normally consists of a minimum of seven and a half full-course credits in Music as follows:

(a) Music 30.150 and Music 30.190* to be taken during the First year;

(b) Courses totalling four full credits at the 200 level, normally to be completed by the end of the Second year, which must be chosen from 30.210* and above;

(c) The remaining two credits to be chosen from the 300 level.

2. It is also expected that some work will be taken in related disciplines, for example: Art History, Classics, Computing Science, English, History, Languages (French, German, Italian, Latin), Mathematics, Philosophy, Physics.

3. Music Major students are required to attain a grade of at least C- in Music 30.150.

Combined Majors

For Major programs combining Music with another subject the general rule is that they must include at least four full-course credits in Music, of which two must be at the 200 level (30.210* or above) and one at the 300 level. Combined Majors are not eligible for Performance courses.

Honours in Music (B.Mus.)

1. The Honours program in Music normally consists of a minimum of eleven full-course credits in Music as follows:

- (a) Music 30.150 and Music 30.190* to be taken during the First year;
- (b) Music 30.250 and Music 30.290* to be taken during the Second year;
- (c) Music 30.210*, 30.211*, 30.212, 30.213*, 30.214*, and 30.215 are to be completed by the end of the Third year;

(d) In addition, four more courses in Music are to be taken, which must include Music 30.390* and 30.490* (normally taken in the Third and Fourth years respectively) and either Music 30.498 or Music 30.460 (each of which carries double weight in assessing the class of degree awarded).

2. At the end of the Fourth year all Honours students must satisfy the following requirements:

- (a) A written comprehensive examination;
- (b) A *viva voce* examination;
- (c) A short recital.

3. Honours students will also normally be required:

(a) To pass, by the end of the Third year, a reading examination in either French, German, Latin or Italian; (French 20.011, and German 22.015, Italian 26.015, Spanish 38.015 and Russian 36.015 will be accepted in lieu of this examination);

(b) To undertake work in related disciplines.

4. Music Honours students are required to attain a grade of at least C- in Music 30.150 and Music 30.250.

Combined Honours Programs (B.A. Hons.)

Students who wish to propose a Combined Honours program must consult the Department. Normally they will be required to take six courses which must include either Music 30.460 or 30.498 and at least two courses at the 200 level (30.210* or above) and two courses at the 300 level. Students in the Combined Honours program are not eligible for the Performance courses.

Courses Offered

Music 30.050

Elementary Materials of Music

A course for those who, although interested in the theory of music, have had no opportunity to study it systematically. Rudiments, elementary theory and the basics of keyboard harmony will be taught by means of an audio-visual method that makes use of programmed instruction, and there will also be some elementary musical dictation. The credit gained from this course will not count as part of the specific requirements for a Major or Honours in Music.

Evening division: Lectures two hours a week plus seminars.

Music 30.100

Introduction to the Music of Western Civilization

This course will provide a general perspective of musical history and literature from the Middle Ages to the present within the context of Western Civilization, with special reference to musical styles of the past three centuries. It will include a consideration of main trends and significant personalities with emphasis on the listening experience itself.

Day division: Lectures three hours a week.

Evening division (off campus): Lectures three hours a week. Location to be announced.

Music 30.150

Materials and Techniques of Music I

A theoretical and practical study of rhythm, melody, harmony, counterpoint and structures through the style of the baroque and early classical periods. Aural training, keyboard harmony and the writing of music will be studied.

Prerequisite: Some keyboard facility (or facility in the classical guitar may be considered) and permission of the Department. A simple placement test will be conducted at Registration and will be compulsory for all those who wish to enrol. Specimen tests may be obtained from the Department.

Day division: Lectures two and a half hours a week plus seminars.

Music 30.190*

Performance I(1)

Vocal or instrumental instruction for Music Majors and Honours students only. A reasonable standard of achievement will be demanded on entry and every prospective student will be required to attend an audition conducted by the Department before being admitted. There will be a further audition before a student may proceed to Music 30.290*.

Individual tuition, one half hour per week.

Music 30.195*

Performance I(2)

Instruction for Music Majors and Honours students only, in a second instrument of their choice. There will be an

audition before a student may proceed to continue this study in Music 30.295*.

Individual tuition, one half hour per week.

Music 30.201

The Vocal and Choral Literature of Western Music

A study of musical history through the consideration of song, opera, oratorio and all forms of music for voice or voices.

Prerequisite: Music 30.100 or permission of the Department.

Not offered 1977-78.

Music 30.202

The Keyboard Literature of Western Music

A study of musical history through keyboard repertory, including a comprehensive survey of music for keyboard from the Renaissance to the twentieth century and the circumstances of its composition. Private listening-study and analysis will form part of the course.

Prerequisite: Music 30.100 or permission of the Department.

Day division: Lectures three hours a week.

Music 30.203

Orchestral and Chamber Music Literature

A study of music history through the repertory of concerted instrumental music. A wide range of compositions from the medieval period to the twentieth century will form the basis of the course and some analysis will be undertaken in addition to considerations of social and biographical background.

Prerequisite: Music 30.100 or permission of the Department.

Not offered 1977-78.

Music 30.204

Music of the Western Christian Church from the Reformation to the Present

Study of the history and repertory of the music of the Protestant Church of Europe and North America. Part of the course will be devoted to the problems of performance and there will be a measure of choral singing and organ playing as part of the stylistic study.

Prerequisite: Music 30.100 or permission of the Department.

Not offered 1977-78.

Music 30.210*

Music in the Middle Ages

A survey of European music from the beginning of the Christian era to the end of the fourteenth century, including the study of secular monophony, liturgical music and medieval polyphony.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.211*

Music in the Renaissance

The development of vocal and instrumental music from 1400 to 1600, including examination of the important works by the masters of the Burgundian and Flemish

schools, of Roman and Protestant church music, of the Italian madrigal, the French chanson and Elizabethan music.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.212

Music in the Baroque Era

A survey of European music and its environment from approximately 1600 to the deaths of Bach and Handel. Topics will include: Italian opera, solo and concerted instrumental music; music for the Catholic and Protestant churches; the music and significance of major personalities from Monteverdi and Schutz to Bach and Handel.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.213*

Music in the Classical Era

A study of European music from the early eighteenth century to the beginning of Romanticism. The evolution of the classical style will be traced in the important works of composers from the pre-classic period to the Viennese school of Haydn, Mozart and Beethoven.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.214*

Music in the Romantic Era

A survey of Western music from the age of Beethoven to the late nineteenth century. Important genres (opera, art-song, symphony and symphonic poem) as well as individual and national styles will be examined in the context of the socio-political climate of the period.

Prerequisite: Permission of the Department.

Not offered 1977-78

Music 30.215

Twentieth-Century Music

Music since *Tristan und Isolde* including an examination of all modern idioms from Debussyan impressionism to electronic music and contemporary multi-media forms.

Prerequisite: Permission of the Department.

Not offered 1977-78.

Music 30.250

Materials and Techniques of Music II

A continuation of Music 30.150. The study will progress to more complicated and advanced stages involving the study of styles from European modal writing to twentieth-century idioms. Keyboard harmony, aural dictation and written work will form the basis of the study.

Prerequisite: Music 30.150 or permission of the Department.

Day division: Lectures two hours a week plus seminars.

Music 30.290*

Performance II(1)

A continuation of Music 30.190* for Music Majors and Honours students only. An audition will be necessary

before a student may proceed to Music 30.390*. Individual tuition, one half hour per week.

Music 30.295*

Performance II(2)

A continuation of Music 30.195* for Music Majors and Honours students only.

Individual tuition, one half hour per week.

Music 30.300

Instrumental and Vocal Literature Studied in situ

A course designed to study the music of a chosen country in the environment in which it was composed and originally performed. This will normally be offered as a Summer course and given wholly or partly in the country concerned. The locale will vary from year to year and will be chosen in conjunction with other departments of the University giving overseas courses which may be of help to music students, e.g. language departments. Students will be required to attend seminars and to undertake prescribed reading before departure.

Prerequisite: Permission of the Department.

Not offered 1977-78.

Music 30.310*

Music in Canada 1600-1900

An historical survey of musical life in Canada from 1600 to 1900. Topics include: music in New France; French-Canadian folksong, Indian traditional song and dance; musical life in the nineteenth century; popular music in Canada; early composers; music in performance; etc.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.311*

Canadian Music in the Twentieth Century

A study of Canadian composition in the twentieth century with special reference to post-1945 developments from Weinzwieg to Schafer.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.315

Music Cultures of the World (Elementary Ethnomusicology)

A comparative and analytical study of music in non-literate, folk, and Asian high cultures, through an examination of musical instruments, theoretical systems, and the role of music in society.

Prerequisite: Permission of the Department.

Not offered 1977-78.

Music 30.320* to 30.329*

Specialized Studies in Selected Topics

Courses to enable students to study in depth one or more significant musical genres. Topics will be selected from such areas as: the pianoforte concertos of Mozart; the music of the English Reformation; myth and legend in German Romantic Opera; formal processes in the music of Stockhausen; fugue in Beethoven; Satie and

his milieu; and may involve individual research and presentation from each student. Half courses may be offered in either the First or Second term and students should consult the Department for further details concerning course content.

Prerequisite: Permission of the Department.

Day division: Lectures three hours a week.

Music 30.350

Materials and Techniques of Music III

In part a continuation of Music 30.250 and a specialized course for students who wish to study the theory of music in some depth, possibly as preparation for post-graduate work.

Prerequisite: Music 30.250 or permission of the Department.

Not offered 1977-78.

Music 30.355

Stylistic and Structural Analysis

A study of traditional techniques of musical structure and their application in historical and contemporary styles.

Prerequisite: Music 30.150, some or all of 30.210* - 30.215, or permission of the Department.

Day division: Tutorial three hours a week.

Music 30.360

Composition

A course for students who possess an aptitude for composition and wish to study basic compositional techniques and their application through the writing of original music.

Prerequisite: Permission of the Department.

Day division.

Music 30.361

Instrumentation

A study of the instruments of the orchestra, their historical background, ranges, tonal qualities, technical peculiarities and transpositions. Score reading, and practical scoring for various instrumental ensembles, orchestra and band will be undertaken. Application of these techniques for use in concert music as well as background music for film and television will be discussed.

Prerequisite: Permission of the Department.

Not offered 1977-78.

Music 30.362

Electronic Music Studio Techniques

A course designed primarily as a practical study of electronic music studio techniques for the purpose of acquiring basic skills necessary for composition in the electronic medium. Students will also be encouraged to acquire special insight into the problems of composition in this medium through the creation of several short exercises and, in seminar, through critical discussion and evaluation of each other's work. Seminar group and studio supervision, plus private studio time. Enrolment for this course will be limited.

Day division: Seminar two hours a week.

Music 30.390***Performance III(1)**

A continuation of Music 30.290* for Music Majors and Honours students only. An audition will be necessary before a student may proceed to Music 30.490*. Individual tuition, one half hour per week.

Music 30.450**Materials and Techniques of Music IV**

A continuation of Music 30.350 proceeding to the writing of extended works in a variety of idioms from the early Renaissance to the twentieth century. The emphasis will be less on the production of original compositions than on the study of stylistic compositional techniques through analysis and pastiche writing. A measure of continuo realisation and editorial procedures will be included.

Prerequisite: Music 30.350 or permission of the Department.

Day division: Tutorials two hours a week.

Music 30.455**Advanced Analysis**

A continuation of Music 30.355 to include an in-depth analysis of a small number of selected works chosen from some or all of the major historical periods from the Middle Ages to the contemporary avant-garde. Not offered 1977-78.

Music 30.460**Advanced Composition**

This course is designed for students with a displayed aptitude for composition, and centres around the writing of original work, some of which must be prepared for performance. Students will be required to produce several works for either instrumental/vocal or electronic media or both, and appropriate prerequisites will normally be required (in the form of some or all of Music 30.350, 30.355, 30.360, 30.361, 30.362 or equivalents and according to the discretion of the instructor) before a student is permitted to enrol. In addition to the preparation of original work, seminar groups will be held during which music by established composers of diverse styles and techniques will be studied and critical discussion of each student's work-in-progress will be encouraged.

Seminar and individual supervision, plus private time in the electronic music studio as required. For students wishing to use the electronic music studio facilities, enrolment may have to be limited.

Day division.

Music 30.490***Performance IV(1)**

A continuation of Music 30.390* for Honours students only. A final audition in the form of a short prepared recital will be required.

Individual tuition, one half hour per week.

Music 30.498**Honours Essay in Musicology**

An Honours research essay on a topic chosen in consultation with the Department and an assigned supervisor. A high level of personal research and subsequent presentation will be required. This course carries double weight.

Music 30.510* and Music 30.511***Graduate Studies in Canadian Music**

See Graduate Studies and Research Calendar.

Courses Planned for Summer School 1977-80

Beginning in the Summer of 1976, Music 30.150 was offered in alternating years in the Evening division.

Other courses will be rotated over a period of four years in such a way that students may be sure of meeting their degree requirements.

Department of Philosophy

Officers of Instruction

Chairman

Stephen Talmage

Co-ordinator, St. Patrick's College

Stanley G. Clarke

Professors

Bernard Wand

J.C.S. Wernham

Associate Professors

J.A. Brook

Andrew Jeffrey

J.T. O'Manique (*St. Patrick's College*)

Stephen Talmage

James M. Thompson

J. Wolfe

Assistant Professors

Stanley G. Clarke (*St. Patrick's College*)

D.E. Dubrulle (*St. Patrick's College*)

B.I. Egyed (*St. Patrick's College*)

Marvin Glass

John W. Leyden

Randal R.A. Marlin

Courses Open to First Year Students

The following full courses are open to First year students: Philosophy 32.100, 32.110, 32.120 and 32.150. The following half courses are open to First year students: in the First term Philosophy 32.101*, 32.103* and 32.266*; in the Second term Philosophy 32.102*, 32.106* and 32.107*. Credit cannot be received for either of 32.103* and 32.107*, and for 32.105. Credit will not be given for more than two full courses or the equivalent at the 100 level.

Major Program

Majors in Philosophy will take a minimum of six courses in Philosophy including five courses beyond the 100 level.

These courses must be chosen to include one of Philosophy 32.205, 32.215, 32.305; one of Philosophy 32.230, 32.250, 32.280, 32.335, 32.380; and one of Philosophy 32.210, 32.240, 32.330.

Special arrangements will be made for students proposing a Combined Major program. The normal requirement in Philosophy is five courses, including four beyond the 100 level.

All Majors and Combined Majors will arrange their programs in consultation with the Department.

A student who enters the Major program before the end of First year may not continue in it unless, before the beginning of Second year, he has obtained a grade of C- or better in one of the introductory courses in Philosophy. A student may not enter the Major program at the end of First year or later, unless he has obtained a grade of C- or better in one of the introductory courses in Philosophy, or a grade of B- or better in Humanities 10.100 or Religion 34.100.

Honours Program

The Honours program may be entered at the beginning of the First year or by transfer from the Major course (p. 58). A full introductory course or two half courses in Philosophy will be taken in the First year. In certain circumstances this requirement will be waived for students entering the Honours or Combined Honours program after the First year, who may be permitted to substitute an upper year course in Philosophy.

The Honours program will consist of a minimum of twenty full courses or the equivalent. Of these at least nine full courses, or the equivalent, including eight beyond the 100 level, will be courses in Philosophy. The program for the Second and subsequent years will be planned in consultation with the Department. The following courses are required:

1. One of Philosophy 32.205, 32.270, 32.305, 32.380;
2. Either 32.210 or 32.330;
3. 32.215;
4. 32.230 or 32.335;
5. Either 32.250 or 32.380;
6. 32.306* (if 32.305 not taken under 1);
7. Equivalent of two full courses at the 400 or 500 level.

Combined Honours Programs

Combined Honours programs are available in Philosophy with the following subjects: Art History, English, History, Law, Political Science, Greek, Economics, French, German, Mathematics, Psychology, Religion and Sociology/Anthropology. Special arrangements may be made for other combinations.

The normal Philosophy requirements are seven courses to include six beyond the First year level including one full course or equivalent at the 400 or 500 level. Details of these programs may be obtained from the Department.

Graduate Program

The Department of Philosophy offers studies leading to the degree of Master of Arts. For information see the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Courses Offered

Philosophy 32.100 (07.110)

Themes in History of Philosophy

This course is designed to familiarize the student with philosophical issues through historically influential writings. The development of a number of themes will be traced through the texts of major philosophers in the Western tradition. Among these themes will be the nature and extent of human knowledge, the validity of religious beliefs and moral values, the nature and destiny of man and the purpose and importance of philosophical thinking.

Offered at St. Patrick's College.

Day division: Lectures and discussion three hours a week.

S.G. Clarke, J.T. O'Manique

Philosophy 32.101*

Ethics and Philosophy of Religion

An examination of arguments for and against the existence of God; the nature of religious language and the meaning and justification of moral judgments.

Day division, First term: Lectures and discussion three hours a week.

J. Wolfe

Philosophy 32.102*

Knowledge and Meaning

The justification of our belief in an external world and in the possibility of predicting the future, the nature of knowledge and of ultimate reality, the nature of language and the meaning of "meaning".

Day division, Second term: Lectures and discussion three hours a week.

J. Wolfe

Philosophy 32.103*

Philosophical Texts I

An examination, both historical and critical, of selected philosophical texts. Works to be studied will include Plato, *The Republic* and Descartes, *Meditations*.

Evening division, First term: Lectures and discussion three hours a week.

Philosophy 32.105

Philosophical Texts

An introduction to some central philosophical issues through an examination, both interpretive and critical, of a selection of influential works in Western philosophy. While the texts to be studied will be representative of different periods from Plato to the present day, emphasis will be placed on the relevance of previous thinking to current philosophical debates.

Not offered 1977-78.

Philosophy 32.106*

Metaphysics and Truth

A discussion of the following questions: how mind is related to body; what freedom is and whether it is possible; what truth is and how philosophical truths differ from truths of science.

Day division, Second term: Lectures and discussion three hours a week.

J.A. Brook

Philosophy 32.107*

Philosophical Texts II

An examination, both historical and critical, of selected philosophical texts. Works to be studied will include Hume, *An Enquiry Concerning Human Understanding*; Ayer, *Language, Truth and Logic*.

Evening division, Second term: Lectures and discussion three hours a week.

Philosophy 32.110

Consciousness and Reality

An examination of problems drawn from historical and contemporary sources concerning the relation of consciousness and reality. The questions to be discussed will include: Are we conscious of a world existing independently of us? Does our consciousness extend only to objects in the world or to realities beyond this realm? Is consciousness reducible to a physical process? Can consciousness exist independently of the body? Is there a consciousness of self and what is the relation between self and the body of which we are conscious? Is there consciousness of value existing objectively in the universe?

Day division: Lectures and discussion three hours a week.

J.C.S. Wernham, J. Wolfe

Philosophy 32.120

Reason and Argument

An examination of the nature of controversy and of procedures for help in resolving it by rational means. The course will include an introduction to formal logic. A variety of extended arguments will be considered. Some of these arguments (about half) will be philosophical; others will be arguments in support of controversial theses in such fields as morals, politics, education and theology.

Day division: Lectures and discussion three hours a week.

S. Talmage

Philosophy 32.140

Explanation and Objectivity

An examination of certain notions which are common to a variety of disciplines. Explanations occur in the sciences, natural and social, in history, in literary studies. The course will investigate the role of explanation in these disciplines and the types of explanation characteristic of them. The claim to be objective is made in most disciplines and is disputed in some. The course will distinguish different kinds of objectivity and will discuss in what sense or senses different disciplines can be said to be objective.
Not offered 1977-78.

Philosophy 32.150

Contemporary Moral, Social, and Religious Issues

A critical examination of some of the philosophical problems associated with such topical issues as Women's liberation (e.g. marriage, the family, abortion, and sexual ethics); Marxism, atheism vs. theism; the meaning of life (e.g. existentialism and Zen Buddhism); moral relativism vs. moral objectivism; egoistic vs. non-egoistic ethics (e.g. Ayn Rand and utilitarianism); legal paternalism (e.g. "hard" and "soft" drugs, suicide, medicare); free-will; and civil disobedience.

Day division: Lectures and discussion three hours a week.

In 1977-78 also offered off campus. Location to be announced.

M. Glass

Philosophy 32.200 (07.200)

Science and Man

An examination of the scientific view of the world. The course will begin with a discussion of general topics in the philosophy of science such as revolutions in science, paradigms, objectivity, ideology, rationality, and the growth of scientific knowledge. Following this, specific philosophical issues in the science of man will be discussed, such as problems in perception, learning, and psychotherapy, the nature of some psychological concepts, problems in psychological research and method, and moral and political aspects of psychology. Offered at St. Patrick's College.

Day division: Lectures and seminars three hours a week.

B.I. Eged

Philosophy 32.202

Ideas of Man and Society in Canada

An examination of Canadian ideas of man, culture and society in the context of their philosophical traditions. Emphasis will be placed on the themes of nationalism; man's interaction with his natural and technical environment; the individual's relation to his past, his society and his culture; and the ideological aspects of traditionalism, social reform and revolution. Considerable attention will be devoted to the influence of European philosophers on Canadian ideas. In 1977-78 the following representatives of Canadian thinking will be discussed: G. Grant, N. Frye, H. Innes, C.B.

McPherson. P.E. Trudeau and P. Vallières.

Offered at St. Patrick's College.

Day division: Lectures and discussion three hours a week.

B.I. Eged

Philosophy 32.205

Greek Philosophy

An examination of early speculation in Greece, the roles of the Sophists and of Socrates, together with a study of selected topics in the works of Plato and Aristotle. (Also listed as Classical Civilization 13.240.)

Prerequisite: An introductory course in Philosophy or permission of the Department.

Evening division: Lectures and discussion three hours a week.

D.E. Dubrule

Philosophy 32.210

Ethics

An examination of historical and contemporary discussions of the principal questions in moral philosophy. First term: The secularization of ethics, Hobbes on egoism and obligation, Butler on conscience, Hume on rationalism in ethics, Kant on moral principles. Second term: Whether moral beliefs can be rationally justified and, if so, how; whether people are morally responsible for their actions and, if so, when; and a selection of moral issues such as the following: punishment, suicide, the morality of war and the rights of disadvantaged groups.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion three hours a week.

R.R.A. Marlin, B. Wand

Philosophy 32.211*

History of Ethics

The first half of Philosophy 32.210, Ethics. (See the description for Philosophy 32.210.)

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division, First term: Lectures and discussion three hours a week.

B. Wand

Philosophy 32.215

Modern Philosophy: 1600-1800

An examination of the major philosophical writers of the seventeenth and eighteenth centuries. Selections will be studied from the works of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion three hours a week.

J.C.S. Wernham

Philosophy 32.225

Reason and Revelation

A study of the evolution of western philosophy up to the end of the Renaissance. Theories of man, knowledge and reality will be traced from the early rationalism of the Greeks through the syntheses of reason with Christianity in the Middle Ages to the humanist rationality of the Renaissance. In-depth studies will be made of six important thinkers: Plotinus, Augustine, Thomas Aquinas, William of Ockham, Montaigne and Francis Bacon.

Offered at St. Patrick's College.

Day division: Lectures and discussion three hours a week.

D.E. Dubrule

Philosophy 32.232*

Philosophy of Science

An introduction to the philosophy of science including discussion of scientific explanation and the relation between theory and observation.

Prerequisites: An introductory course in Philosophy, 32.335, or permission of the Department.

Not offered 1977-78.

Philosophy 32.233*

Philosophy of Social Science

The examination of the types of explanation considered to be appropriate to the understanding of human nature and conduct.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Not offered 1977-78.

Philosophy 32.240

Aesthetics

Analysis of problems in the description, interpretation and evaluation of works of art, including music, literature and the visual arts; together with the study of types of aesthetic theory.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion two hours a week.

J.M. Thompson

Philosophy 32.246*

Death

A study of major issues in philosophical thanatology. Problems will include the medico-legal definitions of death, philosophical concepts of death, our knowledge of death, the possibility of and evidence for survival of death and reincarnation, and the meaning and implications of some ways of dying: suicide, euthanasia, abortion, genocide and capital punishment.

Prerequisite: An introductory course in philosophy or Philosophy 32.266* or permission of the Department.

Offered at St. Patrick's College.

Day division, Second term: Seminars three hours a week.

D.E. Dubrule

Philosophy 32.250

Philosophy of Mind

What is it to have a sense of one's own identity? What do we know of the self? What is personal identity and how is it related to responsibility, love, etc.? What is the relation of 'mind' to body? These are topics to be covered in the First term. Topics in the Second term are selected according to students' interests, and often include: free-will; pleasure and pain; mental illness; desire and action; can we will our beliefs; and how to treat persons as persons, not things.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Discussion and lectures three hours a week.

J.A. Brook

Philosophy 32.251*

Personal Identity and the Self

The first half of Philosophy 32.250, Philosophy of Mind. (See the description for Philosophy 32.250.)

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division, First term: Discussion and lectures three hours a week.

J.A. Brook

Philosophy 32.260

Philosophy of Religion

A philosophical examination of some characteristic concepts of religion, such as faith, hope, worship, revelation, miracle, God. (Also listed as Religion 34.260.)

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion two hours a week.

J.C.S. Wernham

Philosophy 32.265

Philosophy of Education

A philosophical study of what are and what should be the goals of education. Roughly equal time will be spent discussing problems related to pre-university and university education. The conservative, liberal, anarchist and Marxist conceptions of education will be outlined and evaluated. The views of Marx, Russell, Dewey, Piaget, Neill, Kohlberg, Peters, Wolff, and Illich, among others, will be considered in relation to such problems as freedom and authority in education, education and ideology, deschooling society, grading, moral education and moral indoctrination, "I.Q." testing, the nature of the curriculum, racism and the university, and the "ivory tower" conception of the university. Some time will be devoted to a comparison of educational philosophies in North America and socialist countries.

Evening division: Lectures and discussion three hours a week.

M. Glass

Philosophy 32.266* (07.266*)

Personal Ideals and Lifestyles

Problems of describing, analyzing and evaluating personal ideals and lifestyles will be investigated. Emphasis will be given to the works of Iris Murdoch and Albert Camus.

Open to First year students.

Offered at St. Patrick's College.

Day division, First term: Lectures and discussion three hours a week.

S.G. Clarke

Philosophy 32.270

Existentialism and Phenomenology

A study of recent and contemporary philosophical movements in continental Europe. An account will be given of the historical origins of these movements in the thought of Kierkegaard and Husserl. Special attention will be paid to the philosophy of Sartre. The views of Nietzsche, Heidegger, Camus and Merleau-Ponty, together with those of some of their commentators, will also be discussed.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion three hours a week.

R.R.A. Marlin

Philosophy 32.280

Language and Communication

The nature of language as a system of human communication, theories of meaning and meaningfulness, the relation of language to reality and thought.

Not offered 1977-78.

Philosophy 32.284*

Society, Value and Technology

An examination of some ethical problems raised by actual and conceivable advances in technology. In the light of the present and future supply of resources, the modern urban environment and communication systems, what sort of society should we strive for? Specific issues to be dealt with will include genetic engineering, obligations to future generations, triage and fair distribution of the world's vital resources, privacy and social control, and the ideas of progress and growth.

Prerequisite: A full introductory course in Philosophy or permission of the Department.

Not offered 1977-78.

Philosophy 32.291*

Philosophy of Revolution

A study of concepts and theories commonly found in revolutionary literature. Concepts examined will include alienation, violence, repression and revolution. Literature of various authors will be considered, including Marx, Lenin, Trotsky, Mao, Luxemburg, Sorge, Sorel, Fanon, Guevara, Marighela, Vallières,

Not offered 1977-78.

Philosophy 32.305

Modern Philosophy: 1800-

An examination of some major philosophical writers of the nineteenth and twentieth centuries: German idealism from Kant to Hegel; the anti-Hegelian philosophies of Marx, Kierkegaard, Schopenhauer and Nietzsche; American Pragmatism (James, Peirce and Dewey).

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion three hours a week.

J.M. Thompson

Philosophy 32.306*

Kant to Hegel

The first half of Philosophy 32.305: The development of German idealism from Kant to Hegel.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division, First term: Lectures and discussion three hours a week.

J.M. Thompson

Philosophy 32.330

Social and Political Philosophy

An analysis of the concepts used to explain and justify social and political thinking or action: state, society, the common good, justice, rights and obligations, punishment and liberty, and a consideration of the moral basis of political obligation.

Prerequisite: An introductory course in Philosophy or permission of the Department.

Evening division: Lectures and discussion three hours a week.

R.R.A. Marlin

Philosophy 32.335

Logic

An introduction to symbolic logic together with a discussion of some problems in the philosophy of logic.

Day division: Lectures and discussion three hours a week.

S. Talmage

Philosophy 32.350

Philosophy of Law

Theories of the nature and the philosophical basis of law. Classical theories; natural law; the development of positivism; utilitarianism; the analytical theory and the pure theory of law; the historical and sociological schools of jurisprudence, modern legal realism. Law and ethics, law and morality. (Also listed as Law 51.310.)

Prerequisite: An introductory course in Philosophy or permission of the Department.

Day division: Lectures and discussion three hours a week.

P.J. Fitzgerald (Law)

Philosophy 32.380

Moore, Russell, Wittgenstein

A brief account of the Idealism of Bradley will set the context for a study of the reactions of Moore and Russell. Their contributions to metaphysics, theory of knowledge and linguistic analysis will be examined and attention given to their philosophical development. In the Second term there will be a concentrated study of the later work of Wittgenstein. The approach will be both interpretive and problem-oriented.

Prerequisites: Two courses in Philosophy or permission of the Department.

Not offered 1977-78.

Philosophy 32.391*

Philosophical Problems

Topic to be chosen annually from the following: metaphysics-epistemology, metaphilosophy. This course is primarily intended for Major or Honours students in their Third year.

Not offered 1977-78.

Philosophy 32.399

Independent Study

Normally restricted to students with at least three courses in Philosophy and with high standing in Philosophy courses. The student will submit topics for approval and present papers for grading.

■ Fourth Year Courses

Philosophy 32.404*

Greek Philosophy

An intensive study of selected texts.

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Not offered 1977-78.

Philosophy 32.406*

Descartes

Prerequisite: Final year Honours standing in a Philosophy program or permission of the Department.

Not offered 1977-78.

Philosophy 32.407*

Hume

An intensive study of selected texts.

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Second term: Seminar two hours a week.

J. Wolfe

Philosophy 32.408*

Kant

An intensive study of selected texts.

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Second term: Seminar two hours a week.

J.A. Brook

Philosophy 32.409*

Marx

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

First term: Seminar two hours a week.

B.I. Egyed

Philosophy 32.411*

Action, Intention and Responsibility

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Not offered 1977-78.

Philosophy 32.416*

Medieval Philosophy

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Not offered 1977-78.

Philosophy 32.421*

Epistemology

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Second term: Seminar two hours a week.

S.G. Clarke

Philosophy 32.431*

Philosophy of Logic

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

Not offered 1977-78.

Philosophy 32.441*

Contemporary Moral or Political Philosophy

An intensive study of recent works in one or both of these areas.

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

First term: Seminar two hours a week.

B. Wand

Philosophy 32.481*

Philosophy of Language

Prerequisite: Final year Honours standing in a Philosophy program, or permission of the Department.

First term: Seminar two hours a week.

J.A. Brook

Philosophy 32.490

Tutorial

Philosophy 32.491*

Tutorial

Graduate Courses Open to Undergraduate Students

The following graduate course may with permission be taken by Honours and Combined Honours students in their final year.

Philosophy

32.545 Departmental Seminar

**Courses Planned for Summer School and Evening
Division, 1977-79**

Summer 1977

32.105, 32.150, 32.250, 32.251*, 32.270.

Evening Division 1977-78

32.103*, 32.107*, 32.205, 32.265, 32.330.

Summer 1978

32.105, 32.150, 32.210, 32.211*, 32.305, 32.306*.

Evening Division 1978-79

32.110, 32.215, 32.265.

Officers of Instruction

Chairman
Stephen G. Wilson

Professors
David Chung (*St. Patrick's College*)
Robert E. Osborne
Lawrence M. Read

Associate Professors
Nalini Devdas
John P. Dourley (*St. Patrick's College*)
Antonio R. Gualtieri
Robert M. Polzin
C. Peter Slater
Stephen G. Wilson

Assistant Professors
Joseph G. Ramisch (*St. Patrick's College*)
Eugene Rothman
Leonard Librande

Sessional Lecturers
Peredur Jones
A. Squire
B. Sundaresan
Z. Vardi

General Information

The general purpose of courses offered in this Department is to promote a sensitive and intellectually mature understanding of the basic ideas and concerns of outstanding religious leaders and movements irrespective of whether these coincide or conflict with individual convictions. Religious writings are studied critically in an attempt to understand their meaning, to grapple with their problems, and to assess their significance both in their original cultural context and for our own situation.

Programs of Study

Students who elect Religion as their Major or Honours subject will consult their respective departmental adviser before registration each year. Departmental program advisers are:
Honours, C.P. Slater
Majors, R.M. Polzin

Courses Open to First Year Students

The following courses are open to First year students:
Religion 34.100, 34.120, 34.130, 34.201, 34.207, 34.236*, 34.238*, 34.240
Hebrew 34.115
Sanskrit 34.117

Main Areas of Study

Religion courses are divided into three main areas in the following manner:

1. Hebrew and Christian Scriptures: 34.120, 34.207, 34.215, 34.218, 34.219*, 34.220, 34.221*, 34.223*, 34.225, 34.330, 34.337, 34.390, 34.392, 34.484*, 34.485*, 34.490, 34.492;
2. History of Religions: 34.100, 34.202, 34.203, 34.206, 34.207, 34.208, 34.214, 34.216, 34.217, 34.240, 34.270, 34.305, 34.320, 34.325*, 34.340*, 34.345, 34.390, 34.392, 34.486*, 34.487*, 34.490, 34.492;
3. Philosophical-Theological: 34.130, 34.200, 34.201, 34.235, 34.236*, 34.237*, 34.238*, 34.260, 34.265, 34.280, 34.300, 34.303*, 34.306, 34.350, 34.370, 34.390, 34.488*, 34.489*, 34.490, 34.492.

Major Programs

Students majoring in Religion are required to take six courses: one course from the Hebrew/Christian Scriptures, two courses (in different religious traditions) from the History of Religions, and one course from the Theological/Philosophical area, plus two additional courses. One of these six courses must be at the 300 level or above. Courses should be selected in consultation with the Departmental Majors adviser.

Combined Major Programs

A Major combining Religion with another subject must include at least four courses in Religion. Courses should be selected in consultation with the Departmental Majors adviser.

Honours Programs

Honours in Religion

The Honours program may be entered at the beginning of the First year or in later years or by transfer from the Major program.

Students enrolled in an Honours program must take ten courses in Religion: One course from Hebrew/Christian Scriptures, two courses (in different religious traditions) from the History of Religions, one course from the Theological/Philosophical area, Religion 34.490 and four other courses. Apart from Religion 34.490, at least one course must be at the 300 level or above. In place of 34.490 a student may take 400-level seminars equivalent to two credits.

Combined Honours in Philosophy and Religion

Philosophy: At least seven courses in Philosophy including an introductory course, one full course or the

equivalent at the 400 or 500 level, 32.260, if not chosen as a Religion option, and two or three of 32.205, 32.215, 32.305, 32.416*.

Religion: Requirements are the same as those listed below for Combined Honours programs.

Other Combined Honours Programs

Students enrolled in a Combined Honours program are required to take seven courses in Religion: one course from the Hebrew/Christian Scriptures, two courses (in different religious traditions) from the History of Religions, one course from the Theological/Philosophical area, Religion 34.492 and two other courses. Apart from Religion 34.492, at least one course must be at the 300 level or above. In place of Religion 34.492 a student may take 400-level seminars equivalent to one credit.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Courses Offered

Religion 34.100

Exploring Religious Experience: Asian Traditions

A survey of scriptures, beliefs, ethics, worship and institutions of the major religious traditions of Asia, and a discussion of their historical development. The main groups considered are the Hindus, Buddhists, Muslims and Chinese. An attempt is also made to explore the personal or existential meaning of this material and the way in which it expresses and moulds the orientation and values of the participants.

Day and Evening divisions: Lecture-discussion periods three hours a week.

D. Chung, N. Devdas, P. Jones, L. M. Read

Religion 34.120

Introduction to Biblical Literature

A survey of Judaism and Christianity up to the second century A.D. The early history of Israel, the development of Hebrew literature, major concepts of Hebrew religion, the Torah, the great prophets; Jewish sects and literature in the Hellenistic and early Roman periods, including apocalyptic writings and the Dead Sea Scrolls; the early history of Christianity, the teachings of Jesus and the contribution of source and form criticism to the interpretation of the gospels, the life and teaching of Paul, the Johannine writings, the book of Revelation.

Day and Evening divisions: Lecture-discussion periods three hours a week.

R.E. Osborne, R.M. Polzin

Religion 34.130

Religion and Modern Culture

An introduction to critical thinking about religious aspects of modern culture as expressed in literature, science and politics. Discussion will focus on contrasting interpretations of love, alienation, human freedom and related concepts. Reading will be from theistic and non-theistic authors such as Eliade, Tillich, Buber, T.S. Eliot, Graham Greene P. Valières and Margaret Atwood.

Evening division: Lecture-discussion periods three hours a week.

C.P. Slater

Religion 34.200

The Encounter of Science and Religion

The history of the encounter of science and religion from the seventeenth century to the present day. Scientific method and the approach of religion; scientific theories and theological doctrines; science and secular faith.

Day division: Lecture-discussion two hours a week.

L.M. Read

Religion 34.201

Women in Religious Traditions

Feminine symbols and historical attitudes towards women in religion. Themes such as the following will be examined: traditional archetypes of women as earth mother, personified wisdom, temptress and virgin; the status of women in major religious traditions both western and eastern; the application of contemporary theories of liberation to the feminist movement.

Evening division: Lecture-discussion periods two hours a week.

Anne Squire

Religion 34.202

Early Hindu and Buddhist Thought

A study of some of the great texts (in translation) of Hinduism and Buddhism, including examination of their historical context, analysis of their central religious and philosophical ideas, exploration of their role in shaping and expressing the life of Hindus and Buddhists. The class will usually be conducted in seminar form with emphasis on student discussion and reports.

Prerequisite: Religion 34.100 or permission of the Department.

Day division: Lecture-discussion periods two hours a week.

N. Devdas

Religion 34.203

Religion and Art in India, China and Japan

A study of art as an expression of religious ideas and attitudes in India, China and Japan. Slides and films will be used to illustrate the relationship between religion and art in the Hindu and Buddhist traditions of India and in Chinese Buddhist, Taoist and Zen traditions. Some of the themes of the course are: religious expression in prehistoric art; myth and symbol in art forms; motifs underlying temple architecture and sculpture; the

relationship between religious ideas and theories of art, iconography and the place of art in religious practices.

Prerequisite: Religion 34.100 or permission of the Department.

Not offered 1977-78.

Religion 34.206

Religions and Philosophies of East Asia

A study of the history and thought of Confucianism, Taoism, Buddhism in China and Japan, Shintoism and Shamanism with intensive readings in their classical and contemporary literature (in translation).

Prerequisite: Religion 34.100 or permission of the Department.

Day division: Lecture-discussion periods two hours a week.

D. Chung

Religion 34.207

Ancient Near Eastern and Graeco-Roman Religions

An investigation of selected writings in English translation from Egypt, Mesopotamia, and Israel. The writings studied will include narratives, myths, wisdom literature, hymns and poetry. Major themes of this literature include: the world of the gods; the creation of universe; friendship; the inevitability of death; how to succeed in business and life. This will be followed by a study of selected topics in Graeco-Roman religion, such as Homeric religion, chthonic cults, the Sophists, astrology, ruler cults, mystery religions and gnosticism.

Not offered 1977-78.

Religion 34.208

Islam

An introduction to the Islamic religious tradition. A broad historical survey of the entire tradition including a special study of a few of the most important areas. The subjects chosen for special study are the following ones: (1) the life and work of Muhammad; (2) aspects of the Islamic intellectual tradition: philosophy, theology and mysticism; (3) basic religious beliefs and practices of the Muslim peoples. The goal throughout will be to achieve an understanding of the ways in which Muslims have articulated, developed and dealt with the major issues and problems in their religious life.

Prerequisite: Religion 34.100 or permission of the Department.

Day division: Lecture-discussion periods two hours a week.

L. Librande

Religion 34.214

Church, State and Society Since the Renaissance

Offered in the Department of History as History 24.214.

D.G. Bowen

Religion 34.219*

Life and Thought in Ancient Israel

An examination of the major themes contained in early Hebrew literature through study of the first six books of the Hebrew Bible in English translation. Topics for interpretation will include creation and myth, Israel's

patriarchs, the Exodus from Egypt, revelation at Sinai, the Israelite occupation of Canaan, and the desert experience. Emphasis will be given to the ways by which scholars have attempted to interpret these writings and how these ways or methods relate to new approaches such as structural analysis.

Day division, First term: Lecture-discussion periods two hours a week.

R.M. Polzin

Religion 34.220

The Hebrew Prophets

A study of the nature, development and significance of Hebrew prophecy. Psychological aspects of the prophetic experience, including the call, "ecstasy", symbolic actions, and the power of the "word". Investigation of problems such as: the political role of the prophets, relation of the prophets to the cult, distinction of true and false prophets, prediction and fulfillment, compilation of prophetic books. Major attention will be given to the activities and messages of the classical prophets.

Prerequisite: Religion 34.120 or permission of the Department.

Not offered 1977-78.

Religion 34.221*

Hebrew and Near Eastern Wisdom Literature

An investigation of major themes in the wisdom literature of the Hebrew Bible in English translation (e.g., Job, Proverbs, Ecclesiastes, Song of Solomon) in the context of ancient Near Eastern wisdom literature generally. Topics for interpretation include: tensions between religious faith and personal experience; God and the presence of suffering in the world; rules for success in life and business; the religious sceptic; the problem of suicide and the delights of human love. Emphasis will be given to the ways by which scholars have attempted to interpret these writings and how these methods relate to newer approaches such as structural analysis.

Prerequisite: Religion 34.219* or permission of the instructor.

Day division, Second term: Lecture-discussion periods two hours a week.

R.M. Polzin

Religion 34.223*

Between the Testaments

A study of the period from about 400 B.C. to 100 A.D.: the history, movements, and ideas crucial to the development of Judaism and Christianity, as documented especially in the writings which were not included in the Bible. Consideration of wisdom literature, apocalyptic writings, historical works and Rabbinical literature. Special attention will be given to the Dead Sea Scrolls. Prerequisite: Religion 34.120 or permission of the Department.

Not offered 1977-78.

Religion 34.225

The Life and Teaching of Jesus

The course will be concerned with a systematic study of the available records of the life of Jesus. Class periods will be mainly taken up with free class discussions of successive sections of the gospel parallels of Matthew, Mark and Luke. There will be accompanying lectures and readings on the historical context of the life of Jesus and on the milieu within which the records developed. Day division: Seminar three hours a week.

R.E. Osborne

Religion 34.235

Religion and Contemporary Moral Issues

An analysis of the nature of religious ethics, both the explicit moral principles and rules of various religious traditions, and the general moral perspectives generated by religious images of ultimate reality, history, human nature and the physical world. In the light of this, contemporary moral issues such as the following will be examined: cultural integrity (e.g., Indian, Inuit, Quebecois), violent liberation and just war, crime and punishment, sexuality, role of men and women, marriage, abortion, alienation in modern society, drugs, economic order and conflict, ecology and pollution.

Day division: Seminar three hours a week.

A.R. Gualtieri

Religion 34.236*

Selected Topics in Religion

Topic for 1977-78: Religious Aspects of Canadian Culture. A discussion of the religious significance of selected racial myths and national dreams, of the privatization of the churches and symbolism associated with various national institutions and of selected biographies, autobiographies and novels illustrating personal responses to cultural crisis, e.g., the wars, the depression and the separatist movement in Quebec. Prerequisite: Religion 34.130 or permission of the Department.

Day division, Second term: Lecture-discussion periods two hours a week.

C.P. Slater

Religion 34.237*

Selected Topics in Religion

Not offered 1977-78.

Religion 34.238*

Death and Afterlife

The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on Christian, Hindu and Buddhist expressions. Students are reminded of a complementary course in the Second term, Philosophy 32.246*.

Evening division, First term: Lecture-discussion periods two hours a week.

A.R. Gualtieri

Religion 34.240

Judaism and the Jewish People

An introduction to Judaism and the Jewish people from the destruction of the Second Temple in 70 C.E. until the present day in Europe and America. A broad historical survey of the religion, culture and civilization of the Jews in the East and the West during the Rabbinic age, the Middle Ages and the modern period. Special attention will be given to basic beliefs and practices as well as to trends and movements important to contemporary Judaism.

Day and Evening divisions: Lectures two hours a week.

E. Rothman

Religion 34.260

Philosophy of Religion

Offered in the Department of Philosophy as Philosophy 32.260.

Religion 34.265

Psychology of Religion

A study of western and non-western religious experience and its interpretation by such authors as William James, Freud, Jung, Allport, Maslow, Erikson and B.F. Skinner.

Prerequisite: One course in either Religion or Psychology or permission of the Department.

Not offered 1977-78.

Religion 34.270

The Development of Christian Thought

The historical and cultural development of selected aspects of Christian thought from its origins to the modern period. Problems considered are the early shift from a semitic to a hellenistic culture; the beginnings of the church as an institution; the development of thinking about Jesus in the early councils; conciliarism and other theories on the nature of the church; medieval efforts at reform; issues in the Protestant Reformation and its aftermath. Analysis of the way change and development have taken place in Christianity will also be included.

Day division: Lecture-discussion two hours a week.

J. Ramisch

Religion 34.280

Modern Religious Thought

An examination of the major currents and developments of religious and philosophical thought among Protestants and Catholics in the nineteenth and twentieth centuries. Protestant developments are traced from the Kantian critique to the present and Catholic thought from its response to the French Revolution up to and beyond Vatican II.

Prerequisite: One course in Religion or Philosophy.

Not offered 1977-78.

Religion 34.300

Faith and Atheism

A study of the impact on modern religious thought of secular critiques of traditional theology, existentialist, Marxist and positivist, and of contemporary studies of myths and symbols. The course explores the diversity of

opinion on the nature of the divine and different models for the relationship between faith and doubt, faith and knowledge and faith and wonder.

Prerequisite: Religion 34.130 or permission of the Department.

Day division: Seminar three hours a week.

C.P. Slater

Religion 34.303*

Christ in Recent Christian Thought

An examination of recent theological literature on Christ and discussion of particular issues, such as the "New Quest" of the historical Jesus, reinterpretations of Chalcedon, the use of models in understanding redemption, the resurrection as a religious experience, and Jesus' presence in the Church.

Prerequisite: 34.120 or permission of the Department.

Evening division, Second term: Seminar three hours a week.

J. Ramisch

Religion 34.305

Cultural and Intellectual History of the Middle Ages

Offered in the Department of History as History 24.305.

Religion 34.306

Models of God and Man in the Thought of Paul Tillich, Teilhard de Chardin and C.G. Jung

The course will focus upon a common problematic central to these modern thinkers with backgrounds in theology, science and psychology, namely, the nature of God's presence to and activity in nature and life. The course will expose the concerns and pressures operative in their formulation of the question of God and with the similarities and disparities of their responses. Special attention will be given to their models of the relationship of divine immanence and transcendence and to the consequent shape of the major Christian symbols within these models.

Prerequisite: One of Religion 34.130, 34.200, 34.265, 34.280, 34.300.

Not offered 1977-78.

Religion 34.320

Classical Hindu Philosophers and their Modern Interpreters

The philosophies of Samkara, Ramanuja and Madhva. An introduction to the Tantra system. Modern Hindu movements with special emphasis on the Brahmo Samaj, Ramakrishna movement and the Integral Vedanta of Sri Aurobindo. The influence of Hindu thought on the general development of Indian culture.

Prerequisite: Religion 34.100.

Not offered 1977-78.

Religion 34.325*

Zen (Ch'an) Buddhism

Historical development of Zen Buddhism; discussion of the writings of Zen masters and Zen literature in general; thematic discussions of Zen approaches to Satori; appreciation of Zen paintings and calligraphy.

Day division, Second term: Seminar three hours a week.

D. Chung

Religion 34.330

The Life and Thought of Paul

Paul's relation to the Old Testament, Rabbinic Judaism, and Hellenism; the mission to the Gentiles; the "mysticism" of Paul; central ideas such as justification by faith, predestination, the Holy Spirit, the Church. Consideration of the situation and message of each of Paul's writings.

Prerequisite: Religion 34.120 or permission of the Department.

Day division: Lecture-discussion periods two hours a week.

R.E. Osborne

Religion 34.337

The Johannine Literature

The course will consider interpretations of the Fourth Gospel and the Johannine Epistles involving a close examination of the texts and related problems, such as historical value, symbolic features.

Prerequisites: Religion 34.120 and one of Religion 34.223*, 34.225 or 34.207.

Not offered 1977-78.

Religion 34.340*

Sufism

An historical and systematic survey of mystical thought in Islam from A.D. 700 to 1600. Particular emphasis is given the ideas of men who made outstanding contributions to sufi thought such as al-Junayd, al-Hallaj, al-Ghazali and Ibn al-'Arabi. The course is focused on the manner in which Sufis envisioned the mystical path and on the development of this vision from Muhammad down to the mystic philosophers and members of the sufi brotherhoods. A primary concern, therefore, is what contribution sufism has made to the whole of Islam.

Prerequisite: Religion 34.100 or permission of the Department.

Day division, First term: Seminar three hours a week.

L. Librande

Religion 34.345

Cultural and Intellectual History of the Jews in the Muslim World

A study of the development of the Jews, their society, thought and religion, in the Muslim world, with special reference to the status of the Jewish community after the rise of Islam; the evolving relationship between Judaism and Islam in Spain and elsewhere; the development of law and institutions in the middle ages; and the cultural and intellectual origins of the Jewish-Muslim relationship in the twentieth century. Different themes will be studied each year the seminar is taught.

Prerequisite: Religion 34.240 or permission of the Department.

Not offered 1977-78.

Religion 34.350

Modern Jewish Thought

Modern Jewish thought in response to the Enlightenment, the Zionist and Reform movements, the Holocaust and the establishment of Israel. Special attention will be given to such authors as Mendelssohn, Hirsch, Herzl, Rosenzweig and Fackenheim. Different themes will be studied each year the seminar is taught.

Prerequisite: Religion 34.240 or permission of the Department.

Not offered 1977-78.

Religion 34.370

Theories and Methods in the Study of Religion

This course analyses and seeks a constructive resolution to theoretical and methodological problems such as the following: the definition of religion; understanding the faith of others; the role of presuppositions in interpreting religious data; multidisciplinary approaches (historical, phenomenological, sociological, psychological, theological, dialogical) and the question of a distinctive methodology for religious studies, theories of the nature and origins of religion; religious diversity and the question of religious truth.

Not offered 1977-78.

Religion 34.390

Selected Problems in Interpretation

A course conducted on a tutorial or seminar basis designed to enable advanced students to pursue interests in selected areas of religion.

Prerequisite: Permission of the Department.

Religion 34.484*

Seminar in Comparative Religion: The Concept of Personality in Modern Hindu Thought

Under the influence of Western thought, Hindu leaders re-examined traditional views about man and his relation to the world. This process is examined in the thought of Rāja Rāmmohan Roy, Rabindranāth Tagore, Svāmī Vivekānanda, Sīr Aurobindo and Radhākṛishnan.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, First term: Seminar three hours a week.
N. Devdas

Religion 34.485*

Seminar in Comparative Religion: State, Society and Religion in the Middle East

A study of state, society and religion in the Middle East from the end of the eighteenth century until the present day. Beginning with the impact of the West on the Middle East, there will be an investigation of the ongoing changes in the region. Areas such as the processes of westernization, religious modernization, secularization and the continuing impact of religion on state and society will be discussed.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, Second term: Seminar three hours a week.

E. Rothman

Religion 34.486*

Seminar in Biblical and Ancient Near Eastern Studies: The Framework of Deuteronomy — 2 Kings: a Synchronic View

This seminar assumes the unity of Deuteronomy — 2 Kings and will attempt to describe key features of its framework. This will necessarily involve a *synchronic* study, unencumbered by any diachronic assumptions whatsoever, and directed toward a *syntagmatic* analysis of material within this corpus.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, First term: Seminar three hours a week.

R. Polzin

Religion 34.487*

Seminar in Biblical and Ancient Near Eastern Studies: Jesus' Use of the Hebrew Scriptures

An examination of the hermeneutical problems involved in Jesus' use of the Hebrew scriptures in the Gospel records. This will include an investigation of selected themes such as Jesus' view of the Law, the use of titles such as Son of God, Son of David, Son of Man, Servant, and Jesus' eschatological teaching.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, Second term: Seminar three hours a week.

R.E. Osborne

Religion 34.488*

Seminar in Modern Religious Thought and Culture: Wittgenstein and Whitehead and Their Impact on Philosophy of Religion

A Study of the impact of linguistic philosophy and process philosophy on the philosophy of religion.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, First term: Seminar three hours a week.

L.M. Read

Religion 34.489*

Seminar in Modern Religious Thought and Culture: The Interconnection of Religion and Ethics

An enquiry into the connection between assumptions about divinity or the sacred, man, history, nature implied or explicated in the doctrines and symbols of religious traditions and the morality of those traditions. Focus will be on M. Spiro, *Buddhism and Society*, M. Weber, *The Protestant Ethic and the Spirit of Capitalism*, S. Radhākṛishnan, *Religion and Society*.

Prerequisite: Permission of the Instructor. Normally only Fourth year Honours or Combined Honours students will be admitted.

Day division, Second term: Seminar three hours a week.

A.R. Gualtieri

Religion 34.490

Thesis (Equivalent to two courses)

Prerequisite: Permission of the Department.

Day or Evening division: Hours to be arranged.

Members of the Department

Religion 34.492

Thesis (Equivalent to one course)

Prerequisite: Permission of the Department.

Day or Evening division: Hours to be arranged.

Members of the Department

■ Language Courses

Language courses are intended primarily for students wishing to specialize in a particular religious tradition. Courses taken at the 200 level or above will be mainly independent study under the supervision of a member of the Department. Students interested in taking these courses should consult the department chairman.

Religion 34.016*

Non-Indo-European Language Study 1

Given in Linguistics as Linguistics 29.381*.

Religion 34.115

Introduction to Hebrew

An introduction to Hebrew with emphasis on reading comprehension and conversation. Language tapes are used in conjunction with the textbook. Restricted to beginners in the language.

Prerequisite: Permission of the Department.

Evening division: Lecture periods three hours a week.

S. Vardi

Religion 34.117

Introduction to Sanskrit

A beginner's introduction to the fundamentals of the language with emphasis on reading and writing skills.

Evening division: Three hours a week.

B. Sundaresan

Religion 34.215

Intermediate Hebrew

Readings in Hebrew literature derived from classical and modern sources will be analysed according to style content and structure. The seminar in large part will be conducted in Hebrew.

Religion 34.216

Readings in Classical Arabic

Selected readings from the Qur'ān will be examined for grammar, syntax and content and the course will involve translation, composition and interpretation.

Prerequisites: Linguistics 29.381* and Religion 34.100.

Religion 34.217

Readings in Sanskrit Literature

A study of selected readings from early Hindu literature.

Prerequisites: Religion 34.100 and 34.117.

Religion 34.218

New Testament Greek

A study of the form and content of prescribed readings from the New Testament in Greek with guidance in translation and exegesis.

Prerequisites: Greek 15.015 and Religion 34.120.

Religion 34.392

Language Tutorial

An advanced study of a language in which one of the religious traditions has been transmitted.

Courses Offered at St. Patrick's College

Religion

34.100 Exploring Religious Experience: Asian Traditions

34.120 Introduction to Biblical Literature

34.206 Religions and Philosophies of East Asia

34.270 Development of Christian Thought

34.303* Christ in Recent Christian Thought

34.325* Zen (Ch'an) Buddhism

Courses Planned for Summer School and Evening Division, 1977-78

Summer 1977

34.100, 34.225, 34.235, 34.330.

Evening Division 1977-78

34.115, 34.117, 34.215, 34.100, 34.120, 34.130, 34.201, 34.238*, 34.240, 34.303*.

Department of Russian

Officers of Instruction

Acting Chairman
G.R. Barratt

Professor
V.I. Grebenshikov

Associate Professors
G. Melnikov
E. Stichling
P. Varnai

Instructors
A. Lewinson
H. Van de Lagemaat

The Russian Program

The Department of Russian offers a highly flexible undergraduate program. It has been designed to satisfy a range of different professional and academic interests. There are three major areas of concentration: (a) Russian literature; (b) Soviet period studies; (c) language and linguistics, with the option of translation training. Students will normally follow a basic course sequence: Russian 36.015, 36.100, 36.200, 36.300, and will be required to take Russian 36.201* and 36.301*.

Major Program

The core of a Major program in Russian (single or combined) consists of two courses selected from: Russian 36.200, 36.203, 36.250, depending on the chosen concentration.

A single Major has to choose two additional Russian courses above the 100 level, while the Combined Major chooses one additional course.

To ensure the efficiency of the chosen concentration, the students are advised to select their options in close consultation with the Department.

Honours Programs

Students should bear in mind that certain courses offered by the Russian Department have a *literary* emphasis or nature (e.g. Russian 36.250, 36.450), while others (e.g. Russian 36.303, 36.415) have a *linguistic* emphasis. Students should plan their program in accordance with their interest, within the framework given below. They should do so in consultation with the Department.

The core of an Honours program in Russian (single or combined) will include the following courses:

1. Russian 36.100;
2. Two courses at the 200 level;
3. A course at the 300 level;
4. A course at the 400 level;
5. Four additional courses, at least three of which will be at the 300 and 400 levels.

Combined Majors and Honours are possible with a number of other subjects, among them History, Political Science, Journalism, English, French, Italian, German, Spanish and Linguistics. The Department is also participating in the Comparative Literature program and the Soviet and East European Studies program.

Combined Honours in Russian and Linguistics, Translation Option

A special Combined Honours program is also available to students contemplating a career in Russian to English translation. In this program, the following courses are required:

Linguistics

- 29.100 Introduction to Linguistics
- 29.285 Structures of English
- 29.301* Phonetics
- 29.303* Language Analysis
- 29.304* Grammatical Theory
- 29.490 Tutorial in Linguistics. Tutorial consists obligatorily of directed readings in the theory of translation.

Russian

- 36.100 Intermediate Russian
- 36.200 Advanced Russian
- 36.203 Russian Grammar
- 36.300 Russian Style and Composition
- 36.303 Russian Translation
- 36.491 Tutorial. For students in this program a practicum in translation, with analysis and criticism of selected professional translations.
- 36.499 Honours Essay. For students in this program an annotated translation of a substantial piece of text, with oral defence before a panel consisting of a member of the Russian Department, a member of the Linguistics Department, and a professional translator from the Association of Translators and interpreters of Ontario or the Department of the Secretary of State.

French

At least a 100-level course.

At least five of the remaining course credits shall be chosen from the following list, or from other courses in the same disciplines. Students should discuss with their advisers the different consequences of taking either a sequence of courses in one subject or introductory courses in a number of subjects. With permission, the choice of disciplines may be extended to suit special needs.

Journalism

- 28.110 Introduction to Human Communication

Accounting

41.100 An Introduction to Accounting

Economics

43.100 Principles of Economics

43.101 Contemporary Economic Issues

Geography

45.101 The Geographic Web

Political Science

47.100 Introduction to Political Science

Law

51.100 Introduction to Legal Studies

Sociology-Anthropology

56.100 Introduction to Sociology-Anthropology

Biology

61.100 General Biology

61.101 Introductory General Biology

61.190 Biology and Man

Chemistry

65.106 Chemistry, Man and Society

Geology

67.100 General Geology

67.111* Geology, the Environment and Man I and II

Physics

75.100 or 75.105 Introductory Physics

Computing Science

95.101* or 95.102* Introduction to Computers for the Social Sciences, or Introduction to Computing Science

French

20.200 Cours avancé de langue française

20.300 Grammaire française

20.301 Traduction

Russian

Approved literature courses

Service Courses

1. Russian for Scientists: The Department offers a special course of reading and translation for students in the Natural and Social Sciences, Engineering, and for others interested in the rapid acquisition of a reading skill in Russian. Russian 36.110 is specifically designed to meet the needs of, on the one hand, scientists and engineers, and, on the other, social scientists. The class divides into two groups accordingly, using relevant texts. The course may serve as an Arts or Social Science option for students in any program.

2. Russian Literature in Translation (Russian 36.260) and *Studies in Russian Life and Culture* (Russian 36.360). Conducted entirely in English, these two courses are designed as Arts or Social Science options for all students wishing to broaden their general knowledge of culture and literature.

3. Other Slavic Languages: The Department is also offering additional options in other Slavic languages: **(a)** A basic sequence of Ukrainian 36.116 and 36.216, (beginning and advanced, both in Evening division); the reading-grammar and/or theoretical linguistic approach is emphasized. **(b)** Bulgarian with an introduction to Macedonian, Old Slavonic, and Serbo-Croat are all offered on request, as is Hungarian.

Facilities

The University's language laboratory provides facilities for drill in aural comprehension. Students may take extra practice in periods in open hours. The language laboratory is used in the following courses: Russian 36.015, 36.100, Ukrainian 36.116. Oral examinations are given in these courses and in Russian 36.201* and 36.301*. The audio-visual method is applied in the initial phases of the courses 36.116 and 36.201*.

Courses Offered**Russian 36.015****Introductory Russian**

Introductory course, the aim of which is to ensure an adequate grasp of the mechanics of the language and basic skills in oral comprehension. Reading of texts. One hour per week devoted exclusively to Russian conversation in class. Oral practice in the language laboratory.

Day and Evening divisions: Four hours a week plus one laboratory period a week.

Also offered in Summer session.

Russian 36.100**Intermediate Russian**

Continuation of the basic sequence. Grammar studies, composition, oral drill, reading of selected poetry and prose.

Prerequisite: Russian 36.015 or equivalent.

Day and Evening division: Three hours a week, plus one laboratory period.

Russian 36.110**Russian for Scientists**

This course is designed to meet the needs of all students of the Social and Natural Sciences, Engineering, and Graduate Studies of any year who require a reading knowledge of Russian scientific or technical literature. It includes the essentials of grammar, a basic vocabulary, and the reading of simple texts. No language laboratory. Separate sections are formed for,

on the one hand, natural, and, on the other, social scientists.

Two hours a week.

H. Van de Lagemaat

Russian 36.200

Advanced Russian

Continuation of the basic Russian sequence. Introduction to prose composition and essay writing; further development of comprehension and self-expression in Russian.

Prerequisite: Russian 36.100 or equivalent.

Day and Evening divisions: Three hours a week.

A. Lewinson, E. Stichling

Russian 36.201* (36.101*)

Russian Conversation

Conversation and discussion of current topics with special emphasis on everyday Russian. Occasional written work. Twelve hours of audio-visual introduction. Prerequisite: Russian 36.100, or permission of the Department (may be taken concurrently with Russian 36.100).

Summer 1977, Evening division: Three hours a week.

A. Lewinson

Russian 36.203

Russian Grammar

A systematic review of Russian grammar: selected problems of phonetics and phonology, morphology and syntax, with an introduction to structural and transformational models of Modern Russian.

Prerequisite: Russian 36.100 or equivalent.

Day division: Three hours a week.

A. Lewinson

Russian 36.250

Russian Classics of the Nineteenth Century

Introduction to Russian literature. A study of representative original works of Russian prose, poetry and drama of the period: Pushkin, Lermontov, Gogol, Chekhov and others.

Prerequisite: Russian 36.100 or equivalent.

Evening division: Three hours a week.

G. Melnikov

Russian 36.260

Russian Literature in Translation — Nineteenth and Twentieth Centuries

A study of selected works of Russian and Soviet literature in the general context of European literature and against their social and political background. It will include works by Pushkin, Gogol, Turgenev, Leo Tolstoy, Dostoyevsky, Chekhov, Gorky, Sholokhov, Pasternak, Solzhenitsyn. This course will not count as a credit for Majors in Russian, but can serve as an Arts option for all students.

Day division: Three hours a week.

P. Varnai

Russian 36.300

Russian Style and Composition

Continuation of the basic Russian sequence. Introduction to stylistics and expressive writing. Analysis of semantic and structural peculiarities of Modern Russian. Prerequisite: Russian 36.200 or equivalent.

Day division: Three hours a week.

V. Grebenschikov

Russian 36.301* (36.201*)

Advanced Russian Conversation

An advanced sequel to Russian 36.201*. May be taken concurrently with Russian 36.200.

Prerequisite: Russian 36.201* or permission of the instructor.

Summer 1977, Evening division: Three hours a week.

A. Lewinson

Russian 36.303

Russian Translation

A course of contrastive grammar and stylistics of Russian, English and French. Theory of translation, and extensive exercises in text translation from and into Russian.

Prerequisite: Russian 36.203 or equivalent.

Evening division: Three hours a week.

V. Grebenschikov

Russian 36.330

Russian Early Classics

A study of the main literary trends in the new Russian literature, and the most important representatives of Sentimentalism, Romanticism and early Realism: Karamzin, Fonvizin, Griboyedov, Krylov, Joukovsky, Pushkin, Lermontov, Gogol. Introduction to Russian versification.

Prerequisite: Russian 36.200 or 36.250.

Offered every other year. Not offered 1977-78.

Russian 36.350

Literature and the Russian Revolution

A study of the Russian literature of the revolutionary years (1905-35) and the major trends and experiments in the shaping of a new literature: Symbolism, Futurism, Proletarian Culture, Socialist Realism. Authors studied: M. Gorky, S. Essenin, V. Mayakovsky, A. Blok, I. Babel, L. Leonov, A. Tolstoy.

Prerequisite: Russian 36.200 or 36.250.

Offered every other year.

G. Melnikov

Russian 36.360

Studies in Russian Life and Culture

Under this general title the Department offers service courses in English aimed at students wishing to enlarge their knowledge and understanding of Russia and its culture. This course does not count as credit for Russian Major requirements, but can serve as an Arts option for all students.

Prerequisite: Permission of the instructor.

Not offered 1977-78.

Russian 36.399

Introduction to Methods of Research

Tutorial on topics of Russian or comparative language and literature, aimed at training in methods of scholarly research and Slavic bibliography.

Russian 36.415

History of the Russian Language

The place of modern Russian among the Indo-European languages. The historical development of Russian from Old Slavic to the present. Selected studies in historical grammar and analytical reading of selected medieval and modern texts.

Prerequisite: Russian 36.203 or equivalent.

Offered every other year.

V. Grebenshikov

Russian 36.430

Russian Realism of the Nineteenth Century

A concentrated study of selected works by Turgenev, Dostoyevsky, Tolstoy and Chekhov.

Prerequisite: A Russian course at the 300 level.

Offered every other year. Not offered 1977-78.

Russian 36.440

Contemporary Russian Drama

A study of selected dramatic literature from the Russian revolution to the present against the social and political backgrounds of the times. Major playwrights studied will include Mayakovsky, Vishnevsky, N. Pogodin, Leonov, Gorky; Trenev, Rozov, Volodin and others.

Prerequisite: Russian 36.250 or a Russian course at the 300 level.

Offered every other year.

E. Stichling

Russian 36.450

Contemporary Russian Literature (After 1935)

A study of representative works of contemporary Soviet Russian writers against the social and political backgrounds of the period 1935-1975. Among the writers will be A. Tvardovsky, K. Paustovsky, I. Ehrenburg, Yu. Kazakov, M. Bulgakov, N. Pogodin, E. Evtushenko.

Prerequisite: Russian 36.250 or a Russian course at the 300 level.

Offered every other year. Not offered 1977-78.

Russian 36.460

Old Russian Literature

Survey of Kievan and Muscovite periods. Emphasis on eighteenth century prose.

Prerequisite: A Russian course at the 300 level.

Offered every other year. Not offered 1977-78.

Russian 36.470

Modern Russian Literature

A study of selected prose of the Russian Nobel Prize winners: Bunin, Pasternak, Sholokhov and Solzhenitsyn.

Prerequisite: A Russian course at the 300 level.

Offered every other year. Not offered 1977-78.

Russian 36.490*

Special Subject

Tutorial on topics of Russian literature or linguistics to be assigned by the instructor in consultation with the student.

Russian 36.491

Tutorial

As Russian 36.490*, but offered for full-course credit with a corresponding enlargement of scope and assignments. (Also listed as Comparative Literature 17.506, Styles and Periods.) For students in the Translation Option, a practicum in translation, with analysis and criticism of selected professional translations.

Russian 36.499

Honours Essay

An option for final year Honours students. For students in the Translation Option, an annotated translation of a substantial piece of text, with oral defence before a panel consisting of a member of the Russian Department, a member of the Linguistics Department, and a professional translator.

■ Ukrainian

Ukrainian 36.116

Introductory Ukrainian

An introductory course designed to give students the fundamentals of written and spoken Ukrainian. Grammar, reading, and oral practice. Language laboratory. Evening division: Three hours a week and laboratory session.

H. Van de Lagemaat

Ukrainian 36.216

Advanced Ukrainian

Grammar review, composition, advanced conversation. Reading of selected prose and poetry representing the most typical features of Ukrainian culture in the nineteenth and twentieth centuries.

Prerequisite: Ukrainian 36.116 or permission of the instructor.

Evening division: Three hours a week.

H. Van de Lagemaat

■ Slavic Languages

Slavic 36.390

Slavic Language Tutorial

A study in a Slavic or East-European language, other than Russian or Ukrainian, which may be useful for research, information or translation activities to any graduate or undergraduate student. The course will consist of a two-hour meeting per week with an instructor, and intensive training in language laboratory. The choice of the language in each particular year will depend on the students' demand and the availability of the instructor.

Prerequisite: Russian 36.100 or 36.110 or Ukrainian 36.216 or equivalent.

**Courses Planned for Summer School and Evening
Division, 1977-78**

Summer 1977

36.015, 36.201*, 36.301*.

Evening Division 1977-78

36.015, 36.100, 36.110, 36.116, 36.200, 36.216,
36.250, 36.303, 36.350.

Summer 1978

36.015, 36.201*, 36.301*.

Officers of Instruction

Chairman
R. Larson

Assistant Chairman
F. Atienza

Co-ordinator, St. Patrick's College
A. Lozano

Supervisor of Language Courses
P.J. Roster, Jr.

Supervisors of Honours and Majors
First Term: J.M. López-Saiz
Second Term: A. Lozano

Supervisor of Graduate Studies
R.L. Jackson

Director of Winter Program in Spain
J.M. López-Saiz

Professors
R.L. Jackson
J. Jurado

Associate Professors
F. Atienza
R. Larson
A. López-Fernández
C.A. Marsden
A.W. Urrello (St. Patrick's College)

Assistant Professors
F. Hernández
J.M. López-Saiz
A. Lozano (St. Patrick's College)
P.J. Roster, Jr.

Instructor
M.A. Giella

General Information

The Department offers both Major and Honours programs. Classes are generally conducted in Spanish, and laboratory instruction, an integral part of courses at the 15 and 100 levels, is also available to students in the more advanced language courses.

The Department offers Elementary and Intermediate Portuguese when there is a sufficient number of interested students.

A list of prescribed texts and supplementary reading for all courses beyond the 100 level is available from the Secretary of the Department.

Students are encouraged to take advantage of the favourable atmosphere for informal practice of the language provided by CASA, the Hispanic-American Students' Association.

Acceleration and Intensive Spanish

Students who are beginning the study of Spanish at university, and who are considering Spanish as a Major, should take note of Spanish 38.102, Intensive Introductory Spanish (two credits), 38.101, Intensive Intermediate Spanish, designed specifically for potential Majors, and the Intensive Spanish Program, a year which includes a term abroad, devoted exclusively to the study of Spanish (see below). They are also urged to accelerate their progress, when possible, by taking Summer courses.

Summer Session and Evening Offerings

The Department normally offers language courses (Spanish 38.015, 38.100, 38.201*, 38.202*, 38.301*, 38.302*) through the 300 level in the Evening division during the year (38.301*, 38.302* Summer Evening) and during the Summer session, either Day or Evening. In addition, the Department offers Spanish 38.210 annually in the Evening division and has as well a system of rotation that ensures the offering of a different literature course at the 300, 400 and 500 levels each year in the Evening. The Department also offers a 400-level literature course every Summer.

Study Abroad

The Department has established the policy of giving conversation courses every Summer alternatively in Spain and a Latin American country. In addition, the Department has established a Winter Program Abroad, Second term (see below).

Intensive Spanish Program and Winter Program in Spain

The Intensive Spanish Program is a year including a term in Spain devoted exclusively to the study of Spanish. The program is divided into two terms: First and Second. During the First term the Intensive Language Program (up to two and a half credits) is designed for in-course or new students with little or no Spanish. This half of the program, full details of which are given on p. 217, is offered on the St. Patrick's College campus.

During the Second term the program will be held in Spain, where students will continue their studies by taking another two and a half compressed courses in Spanish.

Courses available abroad are:

Spanish

- 38.202* Spanish Composition
- 38.210 Hispanic Civilization
- 38.301* Advanced Spanish Conversation
- 38.302* Advanced Spanish Composition

The program requires fifteen class hours a week plus regular field trips. Attendance is compulsory, subject to the usual exceptions.

In 1977-78, the program will run in Spain from January to mid-April; classes will be held at the Official School of Languages in Barcelona.

The cost of the Program, including university fees and room and board, is approximately the same as a similar period of full-time study spent at Carleton, plus air fare.

Admission Requirements

Admission to the Winter Program Abroad (Second term) is limited to students who have completed (a) the Intensive Spanish Program, First term or (b) have a credit in a 100-level Spanish course and Spanish 38.201* or the equivalent.

Second or Third year Spanish Majors who wish to take only this second half of the program are advised to take Spanish 38.201*, 38.303* and three other half courses from those available in other disciplines during the First term. Non-Majors wishing to enrol in the program should not only consult the Department of Spanish concerning the program, but also their Major departments (chosen or intended) to arrange a Major program which will permit the necessary absence from Ottawa.

Interested students should apply to Professor J.M. López-Saiz, Director of the Program Abroad (Winter session, Second term), Spanish Department, preferably not later than October 15, 1977.

Details describing the Program Abroad and possible financial assistance are available from the Department and will be forwarded on request.

Majors Programs

Interested students must consult with the Department as early as possible to plan their program. General requirements are as laid down on pp. 56-58 of the Calendar. A Major in Spanish normally consists of five courses after Spanish 38.100 (or 38.101 or 38.102); Spanish 38.210 is compulsory, and the three literature courses at the 300 level must be taken. A Combined Major will consist of four courses beyond the 100 level, to include Spanish 38.210 and two literature courses at the 300 level.

Minimum Requirements for Majors and Honours

The Department requires Majors and Honours students to have a minimum of C- in each required literature course at the 300 or 400 level or an average of C overall in these courses.

Honours Programs

Honours in Spanish

General regulations concerning Honours courses are to be found on pp. 58-60. The Honours course in Spanish is designed to give the student a thorough knowledge of Hispanic language and literature. Lectures and seminars cover the origins and evolution of the language, the principal periods of Spanish and Spanish American literature, and include some study of allied literatures in view of further work at the graduate level. The program consists of eight courses after Spanish 38.100 (or equivalent) to include Spanish 38.210, the three literature courses at the 300 level and at least two literature courses at the 400 level. For an explanation of Honours standing see p. 60.

Combined Honours in Spanish and French

This program is recommended especially for students wishing to enter a Faculty of Education in one of the Ontario Universities after completion of the B.A. with a view to becoming a language teacher in a secondary school. Six courses after the 100 level are required in each language. Required courses in Spanish are 38.210, two literature courses at the 300 level and at least one literature course at the 400 level.

Other Combined Honours Programs

Students interested in pursuing an Honours program in which Spanish is combined with another subject are invited to discuss the matter with the Supervisor of Honours in the Department of Spanish. The minimum requirements would be six courses after the 100 level in Spanish, to include Spanish 38.210, two literature courses at the 300 level and at least one literature course at the 400 level.

Graduate Courses

Students in Fourth year Honours may take a maximum of two courses at the 500 level with special permission of the Graduate Studies Committee of the Department of Spanish. These courses are listed separately in the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213. Students from St. Patrick's College who consider it possible that they may later wish to transfer to an Honours program in the Main Campus are advised to become familiar with the general regulations concerning Honours courses in Spanish.

Prerequisites

All students wishing to enrol in a course for which they do not have the prerequisites must obtain the permission of the appropriate department supervisor.

Courses Offered

Spanish 38.015

Introductory Spanish

A course for those with no knowledge of Spanish, designed to give the student the fundamentals of spoken and written Spanish, through oral practice, reading and laboratory work.

Day and Evening divisions: Lectures and laboratory four hours a week.

Also offered in Intensive Spanish Program: First term, St. Patrick's College.

P.J. Roster, Jr., members of the Department

Spanish 38.100

Intermediate Spanish

A course for those with at least one year of Spanish. Grammar review, extensive reading, guided composition, laboratory work.

Prerequisite: Spanish 38.015 or equivalent.

Day and Evening divisions: Lectures and laboratory four hours a week.

Also offered in Intensive Spanish Program: First term, St. Patrick's College.

M.A. Giella, members of the Department

Spanish 38.101

Intensive Intermediate Spanish

A course for potential Majors and for those with Grade 13 Spanish or equivalent. Review of grammar and some advanced syntax; extensive reading, discussion and composition. Laboratory work.

Prerequisites: Spanish 38.015 or equivalent, and permission of the Department. With special permission of the Department students enrolled in this course may take simultaneously Spanish 38.201*.

Day and Evening divisions: Lectures and laboratory four hours a week.

F. Atienza, members of the Department

Spanish 38.102

Intensive Introductory Spanish (two credits)

A course designed for students with little or no knowledge of Spanish. Using an intensive audiolingual approach to Spanish, students can attain in one year the level of proficiency and fluency normally gained in Spanish 38.015 and 38.100. Students not making satisfactory progress will be transferred to the regular introductory course (38.015).

Prerequisite: Permission of the Department.

Day division: Lectures and laboratory six hours a week.

P.J. Roster, Jr., members of the Department

Spanish 38.201*

Spanish Conversation

Conversation and discussion of current problems, supplemented by occasional written work.

Prerequisite: Spanish 38.100 (or 38.101 or 38.102), or permission of the Department.

Day and Evening divisions, First term: Three hours a week.

Also offered in Intensive Spanish Program: First term, St. Patrick's College.

M.A. Giella, members of the Department

Spanish 38.202*

Spanish Composition

A course designed to consolidate the linguistic knowledge attained in Spanish 38.100, and to inculcate the elements of a good Spanish style.

Prerequisite: Spanish 38.100 (or 38.101 or 38.102), or permission of the Department.

Day and Evening divisions, Second term: Three hours a week.

Also offered in Winter Program Abroad (Second term). *Members of the Department*

Spanish 38.210

Hispanic Civilization

An introduction to the culture and civilization of Spain and Spanish America, including readings from their literatures.

Prerequisite: Spanish 38.100 (or 38.101 or 38.102), or permission of the Department.

Evening division: Three hours a week.

Also offered in Winter Program Abroad (Second term). *Members of the Department*

Spanish 38.235

An Introduction to Hispanic Theatre

A study of the theory and practice of dramatic production in Spain and Spanish America together with detailed analysis and interpretative reading of representative plays. Students in the course will be required to participate in the staging of a play.

Prerequisite: Spanish 38.100 (or 38.101 or 38.102), or permission of the Department.

Not offered 1977-78.

Spanish 38.251

Introduction to Literary Analysis: Selected Readings from Spanish and Spanish American Literature

A course designed to introduce students to the study of literature through analysis of selected Spanish and Spanish American works.

Prerequisite: Spanish 38.100 (or 38.101 or 38.102), or permission of the Department.

Day division: Three hours a week.

P.J. Roster, Jr.

Spanish 38.301*

Advanced Oral Spanish

An advanced sequel to Spanish 38.201*.

Prerequisite: Spanish 38.201* or permission of the Department.

Day and Evening divisions, First term: Three hours a week.

Also offered in Winter Program Abroad (Second term).

Members of the Department

Spanish 38.302*

Advanced Spanish Composition

An advanced sequel to Spanish 38.202*.

Prerequisite: Spanish 38.202* or permission of the Department.

Day and Evening divisions, Second term: Three hours a week.

Also offered in Winter Program Abroad (Second term).

Members of the Department

Spanish 38.303*

Spanish Phonetics and Phonology

A descriptive study of the sounds and sound patterns of Spanish. Practical exercises, written and oral. Recommended for teachers.

Prerequisite: Spanish 38.201* and 38.202*, or permission of the Department.

Day division, First term: Three hours a week.

A. Lozano

Spanish 38.320

The Golden Age

Spanish literature of the sixteenth and seventeenth centuries. Study of the principal works and authors from *La Celestina* to Calderón.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department.

Day division: Three hours a week.

J.M. Lopez-Saiz, A. Lozano

Spanish 38.330

Modern Spanish Literature

Spanish literature of the nineteenth and twentieth centuries.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department.

Evening division: Three hours a week.

F. Atienza

Spanish 38.350

Modern Spanish American Literature

Spanish American Literature since Independence (1810-1825). Reading and study of principal literary works of all types from most Spanish American countries.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251 or permission of the Department.

Day division: Three hours a week.

A. Urrello

Spanish 38.402

Stylistics

An advanced course in the theory and practice of composition in Spanish, including also poetics.

Prerequisite: Spanish 38.302* or permission of the Department.

Day division: Three hours a week.

A. López-Fernández

Spanish 38.415

Introduction to Medieval Literature

A study of representative texts from the earliest times up to the end of the fifteenth century.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department. Students will normally have taken a literature course at the 300 level before enrolling in this course.

Day division: Three hours a week.

J. Jurado, A. López-Fernández

Spanish 38.420

Cervantes

A study of Cervantes and his age with particular reference to *Don Quijote*.

Prerequisite: Spanish 38.320 or permission of the Department.

Not offered 1977-78.

Spanish 38.430

Modern Spanish Novel

Representative works of the nineteenth and twentieth centuries.

Prerequisite: Spanish 38.330 or permission of the Department.

Day division: Three hours a week.

A. López-Fernández

Spanish 38.435

Modern Spanish Theatre

Spanish theatre from L.F. Moratín to the present.

Prerequisite: Spanish 38.330 or permission of the Department.

Not offered 1977-78.

Spanish 38.440

Modern Spanish Poetry

Spanish poetry from Bécquer to the present.

Prerequisite: Spanish 38.330 or permission of the Department.

Not offered 1977-78.

Spanish 38.450

Colonial Spanish American Literature

Study of the Colonial period of Spanish America through reading of major literary and historical works of the period.

Prerequisite: Spanish 38.210 or 38.350, or permission of the Department.

Not offered 1977-78.

Spanish 38.460

Twentieth Century Spanish American Novel

Study of the characteristic works of the most noteworthy novelists of the first half of the twentieth century.

Prerequisite: Spanish 38.350 or permission of the Department.

Not offered 1977-78.

Spanish 38.470

Twentieth Century Spanish American Poetry

Study of the principal tendencies in twentieth century Spanish American poetry, with special emphasis on the social poetry of Rubén Darío, César Vallejo, Nicolás Guillén and Pablo Neruda.

Prerequisite: Spanish 38.350 or permission of the Department.

Day division: Three hours a week.

J. L. Jackson

Spanish 38.490

Seminar on a Special Topic

Designed for Honours students normally in their final year, or for Graduate students. Topic for 1977-78: Contemporary Spanish American Theatre. A study of representative works of twentieth century Latin American theatre with emphasis on Mexico, Argentina and Puerto Rico.

Evening division: Three hours a week.

J. Roster, Jr.

Spanish 38.491

Special Studies

From time to time members of the Department will form small groups to study certain problems or aspects of Spanish literature in greater depth than they are covered in other courses. Interested students should consult the Department.

Not offered 1977-78.

Portuguese Courses

Portuguese 38.016

Introductory Portuguese

A course designed to provide the student with the fundamentals of Portuguese grammar, a basic vocabulary and speaking knowledge of Portuguese. Students who have taken courses in other Romance languages should make considerable progress.

Day division: Lectures and laboratory four hours a week.

R. Larson

Sections of the Following Courses are Offered at St. Patrick's College

Spanish

38.015 Elementary Spanish (also in Intensive Spanish Program, First term)

38.100 Intermediate Spanish (also in Intensive Spanish Program, First term)

38.201* Spanish Conversation (also in Intensive Spanish Program, First term)

38.202* Spanish Composition

2000-01 21/10/01

Faculty of Engineering

Officers of the Faculty

Dean

M.C. de Malherbe

Departmental Chairmen

Civil Engineering

J. Adjeleian

Mechanical and Aeronautical Engineering

H.I.H. Saravanamuttoo

Systems Engineering and Computing Science

D.C. Coll

Electronics

A.R. Boothroyd

Faculty Co-ordinator

C.R. Thompson

Computing Science Co-ordinator

R.J.A. Buhr

Assistant Dean and Faculty Registrar

G.M. Matthews

Assistant Faculty Registrar

H. Walker

Bachelor of Engineering Degree Program

The Bachelor of Engineering degree is awarded on successful completion of a four year program of studies. In the first three years the emphasis is on fundamental mathematical, physical and engineering sciences and on basic engineering. In the Fourth year of the B.Eng., curriculum options are offered allowing specialization in Civil, Electrical and Mechanical Engineering.

The engineering programs of study offered at Carleton University meet the academic requirements for professional engineering registration by the Association of Professional Engineers of the Province of Ontario; they also meet the academic requirements for professional registration in the provinces of Alberta, British Columbia, Manitoba, Newfoundland, New Brunswick, Nova Scotia, Prince Edward Island, Quebec, Saskatchewan and the Yukon. The degree of Bachelor of Engineering in Electrical Engineering satisfies the educational requirements of the Institution of Electrical Engineers of London, England, and carries complete exemption from the Institution's examinations.

Admission Requirements

Qualifying University Year

The Ontario Secondary School Graduation Diploma, 70% average must be presented on a minimum of Advanced or Enriched Phase credits at Levels 3 and including an appropriate preparation in Chemistry, Physics and Level 4 Mathematics.

First Year

The Ontario Secondary School Honours Graduation Diploma with a minimum 60% average and including Functions, Calculus, Chemistry and Physics.

A student unable to meet the foregoing specific course requirements but otherwise admissible to Carleton University may be admitted, but will be required to satisfy the outstanding requirements at the Qualifying University year level.

Advanced Standing

Applications for admission with advanced standing in the Second or subsequent years of the program leading to the Bachelor of Engineering degree will be evaluated on an individual basis.

Mature Matriculation

Persons who lack the normal entrance requirements as published in this Calendar but who are twenty-three years of age or over, prior to the session in which they wish to enrol, may receive consideration for admission to a degree program.

Proficiency in English

Since the instructional language of the University is English, applicants must be able to understand and be understood in English, both written and oral. Applicants whose mother tongue is other than English must clearly exhibit this ability.

Enrolment Limitation

Applicants should note that in view of limited human and physical resources, meeting the admission requirements can only establish eligibility for selection to the Faculty of Engineering.

Qualifying University Year

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | |
|--------------------------------|------------------------|----|---------------------------------|----|
| | I | II | I | II |
| 5.010 Introductory Chemistry | 3 | 3 | 3 | 3 |
| 9.006* Functions and Relations | 4 | - | - | - |
| 9.007* Introductory Calculus | - | 4 | - | - |
| 5.010 Pre-University Physics | 3 | 3 | 3 | 3 |
| Elective* | 3 | 3 | 3 | 3 |
| Elective* | 3 | 3 | 3 | 3 |
| Hours per week | 16 | 16 | 12 | 12 |

The hours per week for electives will vary depending upon the electives chosen which must be selected from:

- a) Courses approved for a Qualifying University year science program;
- b) Engineering 88.100;
- c) Engineering 94.165.

Students completing one or both of the Engineering subjects listed above (normally taken as part of the First year program) will substitute the appropriate number of electives for these in their First year program.

First Year

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|--|---------------------------|----|------------------------------------|----|------------------|
| | I | II | I | II | |
| 65.111* Chemistry for Engineering Students | 3 | - | 3 | - | 5 |
| 75.100 Introductory Physics | 3 | 3 | 3 | 3 | 10 |
| Mathematics (Note a) | 5 | 5 | - | - | 10 |
| 82.111* Engineering Analysis | - | 3 | - | 3 | 5 |
| 88.100 Engineering Graphics and Design | 2 | 2 | 4 | 4 | 9 |
| 94.165 Introduction to Computers | 2 | 2 | 2 | 2 | 7 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 18 | 18 | 12 | 12 | 53 |

Note a

All students enrolling in First year Mathematics will be placed in an appropriate course at the commencement of classes.

Students for whom a placement test administered by the Department of Mathematics reveals a need for additional instruction will be registered in Mathematics 69.106*.

Upon successfully completing Mathematics 69.106* students will proceed into Mathematics 69.107* followed by, or concurrent with, 69.117*. Mathematics 69.106* will be counted as a half course credit towards the students' Engineering or Scientific elective program requirements.

Students not placed in Mathematics 69.106* will register in 69.107* followed by, or concurrent with, 69.117*.

Minor Programs

Students are strongly encouraged to organize their elective courses to form a coherent program of study. These "Minor programs" generally involve Engineering and non-Engineering electives in each year of undergraduate study and so are best planned at the beginning of the First year. While the student may organize and select his own program, a number of

particular programs have been organized by faculty and are described in the booklet, "A Guide to Choosing Electives in the Engineering Program".

Engineering Electives

While the Engineering program at Carleton is based on a three year common core followed by a year of specialized study in Civil, Electrical or Mechanical Engineering, students with particular interest in one of these branches may use the elective portion of the program to specialize their studies in their field of interest. This may involve enrolling in required courses from a higher year as electives, although care should be taken to ensure that prerequisite requirements are met. Such courses, if successfully completed, are replaced by electives in the higher year and thereby allow greater specialization.

The program descriptions for the Second, Third and Fourth years give further details on courses particularly oriented towards Civil, Electrical and Mechanical Engineering.

Students often enrol in Engineering 82.104* (Surveying) at the end of the Winter session of their First year as part of their Second year program.

Humanities or Social Science Electives

See Note under Elective Courses, p.166.

Second Year

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|---|---------------------------|----|------------------------------------|-----|------------------|
| | I | II | I | II | |
| 9.201 Intermediate Calculus | 4 | 4 | - | - | 9 |
| 5.233* Electricity and Magnetism (Note a) | 3 | - | 3 | - | 6 |
| 2.220* Mechanics of Materials I | - | 3 | - | 3 | 6 |
| 8.211* Dynamics | 3 | - | 3 | - | 6 |
| 8.240* Introductory Thermodynamics | - | 3 | - | 3 | 6 |
| 8.270* Elements of Materials Engineering | 3 | - | 3 | - | 6 |
| 7.251* Circuits and Signals | - | 3 | - | 3 | 6 |
| Elective*, Engineering or Scientific | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering or Scientific | - | 2 | - | 3/2 | 4 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 18 | 18 | 10½ | 10½ | 60 |

1/2 indicates 3 hours alternate weeks

Note a 75.233* offered 1977-78 only.

Minor Programs

Students who have not yet commenced a Minor program should review the advantages and possibilities offered. Details are given in the booklet, "A Guide to Choosing Electives in the Engineering Program".

Engineering Electives

Courses for which Second year students often have the necessary prerequisites may be grouped according to the specialized fields of engineering as follows:

Civil Engineering

2.104* Surveying
2.331* Hydrology
8.202* Manufacturing Methods and Design
8.272* Engineering Materials
8.371* Manufacturing Processes and Materials Engineering I

94.205* Industrial Engineering I
94.305* Industrial Engineering II
94.310* Systems Analysis

Electrical Engineering

94.205* Industrial Engineering I
94.303* Real-Time Computing Systems
94.305* Industrial Engineering II
94.310* Systems Analysis
Computing Science courses see p. 401.

Mechanical Engineering

82.104* Surveying
88.202* Manufacturing Methods and Design
88.272* Engineering Materials
88.371* Manufacturing Processes and Materials Engineering I
94.205* Industrial Engineering I
94.305* Industrial Engineering II

Third Year

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|---|------------------------|----|---------------------------------|-----|---------------|
| | I | II | I | II | |
| Mathematics, Two Electives (Note a) | 3 | 3 | - | - | 8 |
| 82.322* Mechanics of Solids | 3 | - | 3 | - | 6 |
| 88.323* Engineering Design Studies | - | 2 | - | 3 | 5 |
| 88.332* Introductory Fluid Mechanics | 2 | - | 3 | - | 5 |
| 88.333* Fluid Mechanics and Heat Transfer | - | 3 | - | 3 | 6 |
| 94.361* Systems and Machines | - | 4 | - | 3 | 7 |
| 97.357* Electronics I | 4 | - | 3 | - | 7 |
| Elective*, Engineering or Scientific | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering or Scientific | - | 2 | - | 3/2 | 4 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 17 | 17 | 10½ | 10½ | 59 |

3/2 indicates 3 hours alternate weeks

Note a

Mathematics: any two of Mathematics 69.257* (Introduction to Statistics), 69.305* (Functions of a Complex Variable), 69.306* (Mathematical Methods 1), Engineering 94.366* (Computer Applications).

Engineering Electives

Courses for which Third year students often have the necessary prerequisites may be grouped according to the specialized fields of engineering as follows:

- 94.205* Industrial Engineering I
- 94.305* Industrial Engineering II
- 94.362* Electrical Power Circuits and Machines
- 94.366* Computer Applications

Civil Engineering

- 32.104* Surveying
- 32.331* Hydrology
- 32.333* Urban Planning
- 32.429* Highway Engineering
- 32.434* Transportation
- 32.435* Transportation Geography
- 38.202* Manufacturing Methods and Design
- 38.272* Engineering Materials
- 38.301* Measurement and Instrumentation in Engineering
- 38.371* Manufacturing Processes and Materials Engineering I
- 38.411* Strength Analysis
- 38.412* Failure Analysis and Non-Destruction Testing
- 38.414* Vibration Analysis
- 38.430* Control of Noise Pollution
- 38.447* Heating, Ventilating and Air Conditioning
- 38.472* Manufacturing Processes - Deformation
- 94.205* Industrial Engineering I
- 94.305* Industrial Engineering II

Electrical Engineering

- 38.301* Measurement and Instrumentation in Engineering
 - 38.430* Control of Noise Pollution
 - 38.472* Manufacturing Processes - Deformation
 - 94.205* Industrial Engineering I
 - 94.303* Real-Time Computing Systems
 - 94.305* Industrial Engineering II
 - 94.310* Systems Analysis
 - 94.362* Electrical Power Circuits and Machines
 - 94.366* Computer Applications
 - 94.466* Switching Circuits
 - 97.475* Electronic Properties of Materials
- Computing Science courses see p. 399.

Mechanical Engineering

- 32.104* Surveying
- 32.434* Transportation
- 38.202* Manufacturing Methods and Design
- 38.272* Engineering Materials
- 38.301* Measurement and Instrumentation in Engineering
- 38.371* Manufacturing Processes and Materials Engineering I
- 38.406* Introduction to Vehicle Engineering
- 38.411* Strength Analysis
- 38.412* Failure Analysis and Non-Destruction Testing
- 38.414* Vibration Analysis
- 38.430* Control of Noise Pollution
- 38.447* Heating, Ventilating and Air Conditioning
- 38.472* Manufacturing Processes and Materials Engineering II

Fourth Year (Civil Engineering Option)

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|---|---------------------------|----|------------------------------------|-----|------------------|
| | I | II | I | II | |
| 82.497 Engineering Project | - | - | 4 | 6 | 6 |
| 82.420* Structural Analysis I | 3 | - | 3/2 | - | 5 |
| 82.423* Reinforced Concrete I | 3 | - | 3/2 | - | 5 |
| 82.425* Design of Structural Steel Components | 3 | - | 3/2 | - | 5 |
| 82.428* Geotechnical Engineering | 3 | - | 3/2 | - | 5 |
| 82.480* Resources Planning | - | 2 | - | - | 3 |
| Elective*, Engineering (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering or Scientific (Note a) | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering or Scientific (Note a) | - | 2 | - | 3/2 | 4 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 17 | 15 | 11½ | 13½ | 60 |

3/2 indicates 3 hours alternate weeks.

Note a

Students must elect at least two of Engineering 82.429* (Highway Engineering), 82.333* (Urban Planning), or 82.434* (Transportation).

Civil Engineering

Civil Engineering is primarily concerned with the planning, design, construction, and maintenance of engineering works of all kinds, such as bridges, buildings, dams, airports, highways, railways, subways, harbours, water supply and sewage treatment systems. Civil engineers are employed in all levels of government, consulting offices, contracting firms, and the supply industries in positions of wide technical and administrative responsibility.

At Carleton University, students in their final year in the Civil Engineering Option will build upon the broad background in Engineering developed in the common program of the first three years. The program of the Fourth year requires the students to study in the general areas of structural engineering, transportation, and soil mechanics. The students are also encouraged to make use of all available elective courses to obtain as broad a background in Civil Engineering as is possible.

Electives

- 82.104* Surveying
- 82.331* Hydrology
- 82.333* Urban Planning
- 82.421* Structural Analysis II
- 82.424* Soil Mechanics
- 82.426* Design of Steel Structures
- 82.427* Reinforced Concrete II
- 82.429* Highway Engineering
- 82.430* Structural Planning in Architecture
- 82.434* Transportation
- 82.435* Transportation Geography
- 82.437* Hydraulics of Municipal Waste Water Systems
- 88.202* Manufacturing Methods and Design
- 88.272* Engineering Materials
- 88.301* Measurement and Instrumentation in Engineering
- 88.371* Manufacturing Processes and Materials Engineering I
- 88.411* Strength Analysis
- 88.412* Failure Analysis and Non-Destruction Testing
- 88.414* Vibration Analysis
- 88.430* Control of Noise Pollution
- 88.447* Heating, Ventilating and Air Conditioning
- 88.472* Manufacturing Processes - Deformation
- 94.205* Industrial Engineering I
- 94.305* Industrial Engineering II
- 94.366* Computer Applications
- 94.415* Engineering Management

Fourth Year (Electrical Engineering Option)

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|---|---------------------------|----|------------------------------------|-----|------------------|
| | I | II | I | II | |
| 94.497 or 97.497 Engineering Project | - | - | 4 | 6 | 6 |
| 94.451* Signal Processing | - | 3 | - | 3/2 | 5 |
| 94.455* Automatic Control Systems I | 3 | - | 3/2 | - | 5 |
| 97.453* Electric Transmission and Radiation | - | 3 | - | 3/2 | 5 |
| 97.454* Electromagnetic Fields | 3 | - | - | - | 4 |
| 97.458* Electronics II | 3 | - | 4½ | - | 7 |
| 97.468* Solid State Electronics | 3 | - | 3/2 | - | 5 |
| Elective*, Engineering or Scientific (Note a) | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering or Scientific (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering or Scientific (Note a) | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering or Scientific (Note a) | - | 2 | - | 3/2 | 4 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 17 | 15 | 13 | 13½ | 60 |

3/2 indicates 3 hours alternate weeks

Note a

Students must take Engineering 94.466* (Switching Circuits) in either term of Fourth year if credit has not already been received for this course.

Electrical Engineering

Electrical engineers are engaged in research, design, and development associated with a wide variety of electrical apparatus and systems. Examples include electronics, circuit design and fabrication, communications, power systems, and the design and application of computers. Opportunities exist for electrical engineers in industry, government, and education, as well as private consulting.

At Carleton University, the first three years of the Engineering program provide a broad common background of technical fundamentals. The Fourth year of Electrical Engineering concentrates primarily on electronics, electromagnetics, control and communications. In addition, Electrical Engineering students may further enhance their specialized knowledge by choosing Engineering electives throughout the program in the areas of electronics, materials, systems, and computing.

Electives

- 88.301* Measurement and Instrumentation in Engineering
 - 88.430* Control of Noise Pollution
 - 88.443* Energy Conversion and Power Generation
 - 88.472* Manufacturing Processes - Deformation
 - 94.205* Industrial Engineering I
 - 94.303* Real-Time Computing Systems
 - 94.305* Industrial Engineering II
 - 94.310* Systems Analysis
 - 94.362* Electrical Power Circuits and Machines
 - 94.366* Computer Applications
 - 94.415* Engineering Management
 - 94.456* Automatic Control Systems II
 - 94.457* Introduction to the Architecture of Computer Systems
 - 94.461* Programmable Logic Systems
 - 94.466* Switching Circuits
 - 94.480* Introduction to Software Engineering
 - 94.481* Software Engineering Project
 - 97.469* Semiconductor Devices and Circuits
 - 97.475* Electronic Properties of Materials
 - 97.478* Integrated Circuit Electronics
- Computing Science courses see p. 401.

Fourth Year (Mechanical Engineering Option)

| Term | Lectures and Tutorials | | Laboratory and Problem Analysis | | Course Weight |
|---|---------------------------|----|------------------------------------|-----|------------------|
| | I | II | I | II | |
| 88.497 Engineering Project | - | - | 4 | 6 | 6 |
| 88.402* Machine Design and Practice | 3 | - | 3 | - | 6 |
| 88.403* Mechanical Systems Design | - | 3 | - | 3 | 6 |
| 88.404* Dynamics of Machinery | 2 | - | 3/2 | - | 4 |
| 88.440* Applied Thermodynamics | 3 | - | 3/2 | - | 5 |
| 88.446* Heat Transfer | - | 3 | - | 3/2 | 5 |
| Elective*, Engineering | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering | - | 2 | - | 3/2 | 4 |
| Elective*, Engineering or Scientific | 2 | - | 3/2 | - | 4 |
| Elective*, Engineering or Scientific | - | 2 | - | 3/2 | 4 |
| Elective, Humanities or Social Sciences | 3 | 3 | - | - | 7 |
| Hours per week | 15 | 15 | 13 | 15 | 59 |

3/2 indicates 3 hours alternate weeks

Mechanical Engineering

Mechanical Engineering by its nature is a highly diversified discipline ranging from applied mathematics and physics on the one hand to an empiricism verging on black magic on the other. The discipline embraces three main topic areas – solid mechanics and materials, fluid mechanics, and thermo-sciences, which together provide the breadth necessary for the young graduate mechanical engineer to go forth and practise his art.

At Carleton University, students in their final year in the Mechanical Engineering option will build upon the broad background in Engineering developed in the common core program of the first three years. In addition to the continued major emphasis on design, dynamics, thermodynamics and heat transfer the student can choose elective courses which span a wide range of applied subjects like noise control, energy conversion and power generation, manufacturing processes, aerodynamics and flight mechanics, automatic controls, etc. which reflect the wide range of interests of faculty members of the Department of Mechanical and Aeronautical Engineering. In addition, the final year student completes a major project on a topic of current interest in Mechanical and Aeronautical Engineering.

Electives

- 82.104* Surveying
- 82.434* Transportation
- 82.436* Hydraulics Structures
- 82.437* Hydraulics of Municipal Waste Water Systems
- 88.202* Manufacturing Methods and Design
- 88.272* Engineering Materials
- 88.301* Measurement and Instrumentation in Engineering
- 88.371* Manufacturing Processes and Materials Engineering I
- 88.406* Introduction to Vehicle Engineering
- 88.411* Strength Analysis
- 88.412* Failure Analysis and Non-Destruction Testing
- 88.414* Vibration Analysis
- 88.430* Control of Noise Pollution
- 88.432* Fluid Dynamics
- 88.435* Fluid Machinery
- 88.437* Mechanics of Flight
- 88.441* Power Plant Analysis
- 88.443* Energy Conversion and Power Generation
- 88.447* Heating, Ventilating and Air Conditioning
- 88.452* Mechanical Feedback Control Systems
- 88.472* Manufacturing Processes – Deformation
- 94.205* Industrial Engineering I
- 94.305* Industrial Engineering II
- 94.362* Electrical Power Circuits and Machines
- 94.366* Computer Applications
- 94.415* Engineering Management
- 94.456* Automatic Control Systems II

General Information

The study of Engineering is necessarily structured. Upper year courses are built on the material studied in the previous years and the approach taken is, of course, more advanced. The undergraduate program requirements are shown below, divided into four years. A full-time student normally takes six full courses or equivalent, and must take at least five courses each year unless given special permission by the Faculty of Engineering.

When a student first registers in the Faculty of Engineering he is assigned a faculty member who acts as his faculty adviser. The adviser usually counsels the student for the duration of his undergraduate program. This counselling includes program requirements, selection of electives, and course and program approvals. Students are advised to consult with their faculty advisers on a regular basis, but this does not preclude seeking advice and assistance from other faculty members.

Progress through the program is by means of a modified credit system, although for purposes of scheduling and for the foregoing reasons each student is cited as being in a particular year of the program. In order to move from one program year to the next a student must not be deficient in more than one course from the following lists.

First Year Prerequisites

Mathematics 69.006* and 69.007*
Chemistry 65.010
Physics 75.010

Second Year Prerequisites

Those of the First year plus:
Chemistry 65.111*
Mathematics 69.107* and 69.117*
Physics 75.100
Engineering 82.111*

Third Year Prerequisites

Those of the First and Second years plus:
Mathematics 69.201
Engineering 97.251*, 88.211* and 82.220*

Fourth Year Prerequisites (Civil Engineering Option)

Those of the First, Second and Third years plus:
Engineering 82.322*
Third year Mathematics options

Fourth Year Prerequisites (Electrical Engineering Option)

Those of the First, Second and Third years plus:
Engineering 94.361* and 97.357*
Third year Mathematics options

Fourth Year Prerequisites (Mechanical Engineering Option)

Those of First, Second and Third years plus:
Engineering 88.240* and 82.322*
Third year Mathematics options

The year requirements given above do not relate to a student's academic status, but only to his nominal year designation. However, a student who is taking courses in years above that of his year designation has the responsibility for satisfactorily resolving any prerequisite deficiencies and difficulties in his course program.

Elective Courses

The program requirements of years One through Four are tabulated on pages 156-165. Each year of the program requires that the student include in his program courses from one or more of the following classifications of electives:

1. *Engineering Electives*: All courses bearing course numbers of the Faculty of Engineering (i.e. 82, 88, 94, 97) are approved Engineering Electives.

2. *Scientific Electives*: Courses in this classification include the physical sciences, mathematical sciences, computing sciences and related courses. Approved scientific electives are listed in the booklet "A Guide to Choosing Electives in the Engineering Program".

3. *Humanities or Social Sciences Electives*: Courses in this classification must be chosen from among the appropriate humanities, social sciences or multidisciplinary courses offered in the University. Approved courses are listed in the booklet "A Guide to Choosing Electives in the Engineering Program".

Note:

Where students have a program requirement of three or less humanities or social sciences electives, all of these courses must be chosen from the courses approved in this classification. Where students have a program requirement of four humanities or social sciences electives one may be taken from the list of approved humanities or social sciences or from the list of approved scientific electives. For the purpose of calculating grade point averages, all full credit courses will carry a weight of seven and all half credit courses will carry a weight of four.

Course Level

The level of the number of a course corresponds to the year level; for example, the course Engineering 88.301* is at the Third year level. This indicates the general academic background required and specific prerequisites are also given where appropriate. However, students may take courses at a year level higher than their current registration but they are advised to consult the course instructor if they have doubts regarding their background preparation. In some cases the instructor may also be able to waive specific prerequisites.

Qualifying University Year Courses

Qualifying University year courses cannot be used to satisfy any of the elective requirements in Years I through IV with the following special exception: A Qualifying University year course in one of the language departments may be accepted as a non-Engineering elective provided that the Chairman of the language department concerned informs the Engineering Registrar in writing that the student is most properly placed in a course at that level.

Timetables

All undergraduate courses in the Faculty of Engineering are offered in the Day division only, unless otherwise indicated.

Grading System

Standing in courses will be determined by the Faculty and will be shown by alphabetical grades. The grades used with their corresponding grade points are as follows:

| | |
|---------------|--------------|
| A + 12 | B + 9 |
| A 11 | B 8 |
| A - 10 | B - 7 |
| C + 6 | D + 3 |
| C 5 | D 2 |
| C - 4 | D - 1 |

Passed Supplemental Examination: 2.

Notations to represent special circumstances are as follows:

Aeg

Aegrotat standing is a pass standing granted despite absence from the final examinations. It may be granted by the Engineering Faculty Committee on Admission and Studies only in response to a student's written request. Aegrotat standing will be granted only in exceptional circumstances and if the term work has been of high quality.

Pass

Pass standing in a supplemental examination; equivalent to 2 grade points.

F

Failure; no academic credit.

FNS

Failure, but with supplemental privileges withdrawn because of unsatisfactory term work or an unacceptably low mark in the examination. No academic credit.

Wdn

Withdrawn in good standing; no academic credit.

Abs

Absent from formally scheduled final, special final, supplemental and special supplemental examinations where the necessary term work has been completed. No supplemental privileges. No academic credit.

Def

Students who are absent from final examinations or who are unable to complete their course work for medical or compassionate reasons may apply to the Engineering Faculty Committee on Admission and Studies for deferred examination privileges. Such applications must:

1. be made in writing to the Engineering Faculty Registrar's Office not later than *one week* after the date of the examination; and
2. be fully supported in the case of illness by a medical certificate or by appropriate documents in other cases.

Academic Standing

The academic standing of each full-time student will be reviewed just prior to Fall registration. At that time the student's previous record, including courses from the preceding Summer session and supplemental examination results, will be considered. To achieve satisfactory academic standing, the student must attain standing (a grade point of 1 or better) in at least four full courses, or equivalent, of those for which he has been registered during the past year, and obtain an overall weighted grade point average as given below:

- 2.5 after one year of study
- 2.8 after two years of study
- 3.1 after three years of study
- 3.4 after four or more years of study

A year of study, as used here, refers to the student's period of study and not to the program year defined in the previous section of these regulations. Calculation of the weighted average is based on all the courses in which the student was registered during the year being completed plus the courses of previous years. The most recent grade obtained in each course will be used to compute the grade point average.

Qualifying University year program grade points are calculated as a simple average without weighting of courses. To achieve satisfactory academic standing, the Qualifying University year student must attain standing (a grade point of 1 or better) in at least four full courses, or equivalent, of those for which he has been registered during the past year and obtain a grade point average of 2.5. Qualifying University year program grade points are not used in calculating the overall weighted grade points of the First to Fourth years.

A student, not on probation, who fails to meet the foregoing conditions will be placed on academic probation. A student on probation who meets these conditions will regain satisfactory academic standing; if

he fails to meet these conditions, he will lose his undergraduate status and will be ineligible for future registration in the Faculty of Engineering.

A part-time student will have his record reviewed during the normal review period immediately following his completion of six, twelve and eighteen courses and upon completion of the program requirements. The equivalent of a year of study will be taken to be the completion of six full courses.

Students admitted with advanced standing must obtain an average appropriate to their level of admission but only those courses taken at Carleton University will be included in the evaluation.

Graduation

In order to fulfil the minimum graduation requirements for the degree of Bachelor of Engineering, a candidate must have passed all the course requirements of the First to Fourth years, inclusive, with an overall weighted grade point average of at least 3.4 and, in addition, must be recommended for graduation by the Faculty of Engineering.

Degrees with Distinction

Upon recommendation of the Faculty of Engineering, the notation "with High Distinction" may be made on the academic record of a candidate for the degree of Bachelor of Engineering. To receive this recommendation the candidate is expected to obtain a weighted grade point average of at least 9.0 in the course requirements of the final year and, in addition, a weighted grade point average of at least 7.8 in the course requirements of the First to Fourth years, inclusive.

Upon recommendation of the Faculty of Engineering, the notation "with Distinction" may be made on the academic record of a candidate for the degree of Bachelor of Engineering. To receive this recommendation the candidate is expected to obtain a weighted grade point average of at least 7.8 in the course requirements of the final year and, in addition, a weighted grade point average of at least 6.6 in the course requirements of the First to Fourth years, inclusive.

Department of Civil Engineering

Officers of Instruction

Chairman

J. Adjeleian

Professors

J. Adjeleian

W.H. Bowes

Associate Professors

A.M. Khan

A.P.S. Selvadurai

G.T. Suter

Assistant Professors

J.P. Braaksma

G.A. Hartley

J.L. Humar

J.J. Salinas

Lecturer

G.M. Proctor

Adjunct Professors

K.W. Studnicki-Gizbert

W.E. Wright

Demonstrator

J.D. Rodger

Sessional Lecturers

K. Adamowski

R.F. Legget

R.G. Warnock

Courses Offered

Engineering 82.104*

Surveying

Surveying principles and practice; measurements of distance, difference in elevation, angles and directions; theory, use and adjustments of principal surveying instruments; theory of errors and weighted measurements; engineering surveys, profile, cross sections, earth-work, horizontal and vertical curves; use of rectangular coordinates in surveying; area computation by surveying methods; principles of aerial photogrammetry. Handling of equipment, note-keeping, and surveying procedures are stressed in the field work.

Reference: Davis, Foote and Kelly, *Surveying: Theory and Practice, Fifth Edition*.

Lectures and field work three weeks at the end of the Second term.

G.R. Hartley, J.J. Salinas

Engineering 82.111* (82.110)

Engineering Analysis

Plane statics and introduction to three dimensional statics. Shear and bending moment diagrams: applica-

tions to trusses, frames, and machine members. Introduction to the behaviour of materials; simple stress-strain relationships, yield, ultimate stress, failure stresses in pin-jointed structures.

Second term: Lectures and tutorials three hours a week, problem analysis three hours a week.

J. Adjeleian, G.M. Proctor, J.J. Salinas

Engineering 82.220*

Mechanics of Materials I

Pin-jointed trusses: Forces and stresses in members, design factors, introduction to design, bolted and riveted connections. Bending and shearing stresses in beams by approximate methods. Stresses in thin-walled cylinders due to internal pressure and torsion. Mohr's circle for stress. Stress-strain relations. Bending stresses in beams. Circular members in torsion. Stress-strain relations in shear. Shearing stresses in beams. Mohr's circle for strain. Introduction to electric resistance strain gauges, principal stresses from strain rosette data. Ultimate loads in bending and torsion. Thermal stresses. Buckling of columns.

Prerequisite: Engineering 82.111*.

One term: Lectures three hours a week, problem analysis and laboratory three hours a week. Offered both terms.

W.H. Bowes, G.A. Hartley

Engineering 82.322*

Mechanics of Solids

Material properties; failure theories, fatigue. Inelastic behaviour of beams. Strain energy; theorems of Castigliano. Deformations. Introduction to statically indeterminate structures. Introduction to modern analysis of structures using the computer. Instability; beam columns. Free and forced vibration of the linear single degree of freedom system with damping. Transmissibility and isolation.

Prerequisite: Engineering 82.220*.

Text: Popov, *Introduction to Mechanics of Solids*.

First term: Lectures, three hours a week, problem analysis and laboratory three hours a week.

W.H. Bowes, J.L. Humar, G.T. Suter

Engineering 82.331*

Hydrology

Hydrologic cycle, stream flow, hydrology of snow, subsurface water, hydraulics of wells, unit hydrograph and S-curve analysis of flood flows, infiltration, river and reservoir routing, introduction to statistical inference and time series analysis of hydrologic data. (Also listed as Geology 67.419*.)

Text: Butler, *Engineering Hydrology*.

References: Chow, *Handbook of Applied Hydrology*; DeWeist, *Geohydrology*; Linsley, Kohler and Paulhus, *Hydrology for Engineers*; Wisler and Brater, *Hydrology*. Second term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

K. Adamowski

Engineering 82.333***Urban Planning**

A systematic approach to urban planning. Basic planning studies, Elements of the development plan. Land use plan formulation, zoning and land subdivision. Quantitative methods and special approaches. Interaction of land use and transport. (Also listed as Geography 45.433*.)

Prerequisite: Third year registration.

References: Recent publications.

First term: Lectures two hours a week, problem analysis three hours alternate weeks.

A.M. Khan

Engineering 82.420***Structural Analysis I**

Review of plane statics; analysis of statically determinate structures; influence lines; strain energy; structural deflections and deformations; introduction to flexibility analysis of structures; introduction to stiffness analysis of structures; elastic and inelastic stability of structural elements; introduction to plastic analysis of structures. Prerequisite: Engineering 82.322*.

Text: Michalos and Wilson, *Structural Mechanics and Analysis*.

First term: Lectures three hours a week, problem analysis three hours alternate weeks.

G.A. Hartley

Engineering 82.421***Structural Analysis II**

Theorems relating to elastic structures; deflections of structures by the unit load method; influence lines; matrix formulation of structural problems; analysis by the matrix force method; analysis by the matrix displacement method; computer analysis of structures; introduction to finite elements.

Prerequisites: Engineering 82.420* and Fourth year registration.

Text: Michalos and Wilson, *Structural Mechanics and Analysis*.

Second term: Lectures and tutorials two hours a week, problem analysis three hours alternate weeks.

G.A. Hartley

Engineering 82.423***Reinforced Concrete I**

Properties of concrete, mix design and use of admixtures, curing requirements, shrinkage, creep and temperature effects, ultimate strength and working stress, analysis and design of rectangular beams with tension and compression reinforcement and T beams, diagonal tension, bond, design of web reinforcement, two way and flat slabs, yield-line theory for slabs, concentrically and eccentrically loaded columns, footings, introduction to prestressed concrete.

Prerequisite: Engineering 82.322*.

Texts: Winter, Urquhart, O'Rourke and Nilson, *Design of Concrete Structures*; *National Building Code of Canada*, CSA A23.3.

First term: Lectures three hours a week, problem analysis three hours alternate weeks.

G.T. Suter

Engineering 82.424***Soil Mechanics**

Theoretical soil mechanics. Hydraulics of soils, including seepage, mechanics of piping, and the theory of consolidation; earth pressure theories; bearing capacity; slope stability, settlement of foundations. (Also listed as Geography 45.424* and Geology 67.417*.)

Prerequisites: Engineering 82.428* and Fourth year registration.

Text: Terzaghi and Peck, *Soil Mechanics in Engineering Practice*.

Reference: Taylor, *Fundamentals of Soil Mechanics*.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

A.P.S. Selvadurai

Engineering 82.425***Design of Structural Steel Components**

Determination of loads, factor of safety, properties of structural steels, fabrication and erection of structural steel, the design of axially loaded tension and compression members, design of column base plates, design of beams in flexure, design of simple and moment-resisting welded and bolted connections, design of members subject to combined compression and flexure, design of determinate trusses and plate girders.

Prerequisite: Engineering 82.322*.

Texts: Adams, Krentz and Kulak, *Canadian Structural Steel Design*; *National Building Code of Canada*; C.I.S.C. *Handbook of Steel Construction*.

Reference: Gaylord and Gaylord, *Design of Steel Structures*.

First term: Lectures and tutorials three hours a week, problem analysis three hours alternate weeks.

J. Adjelean

Engineering 82.426***Design of Steel Structures**

Steel building design: the design process, owner's requirements, services, zoning by-laws, fire regulations and fire proofing; building by-laws, structural loads, gravity load design of floor systems, beams, girders, two cycle moment distribution; column gravity loads and moments and design; lateral loads, methods of lateral load resistance, design considerations; bracing system analysis for loads and drift; approximate frame analysis for loads and drift; P- Δ effect; estimating steel costs; introduction to plastic design. Steel bridge design: bridge types, specifications, loads; design considerations; typical design.

Prerequisites: Engineering 82.425* and Fourth year registration.

References: *National Building Code of Canada (1970)*;

CSA Standard S6- 1966 Design of Highway Bridges; *Steel Building Design—CISC Workshop Notes*.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

J. Humar

Engineering 82.427*

Reinforced Concrete II

Prestressed concrete: concept, materials, prestressing systems, stress analysis, design load stages, prestressing losses, member design, cable profiles, ultimate strength, shear and diagonal tension, bond, end block considerations. Concrete bridges: bridge types, design loads, distribution of loads to members and slabs, design procedures for single span slab, T-beam, AASHTO girder, and rigid frame bridges, diaphragms, bearing design. Composite bridge design: general considerations, shear connectors, design considerations. Building components: shear walls, slabs on grade, building frame design.

Prerequisites: Engineering 82.423* and Fourth year registration.

Texts: Winter, *Design of Concrete Structures*; CSA Standard S6, *Design of Highway Bridges*; National Building Code of Canada, 1970.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

G.T. Suter

Engineering 82.428*

Geotechnical Engineering

Introductory soil mechanics, including soil classification, laboratory testing, consolidation theory, shear strength, earth pressure and bearing capacity. Procedures for the analysis, design, and construction of foundations.

Prerequisite: Third year registration.

Texts: Sowers and Sowers, *Introductory Soil Mechanics and Foundations*; Bowles, *Engineering Properties of Soils and their Measurement*.

References: Terzaghi and Peck, *Soil Mechanics in Engineering Practice*; Lambe and Whitman, *Soil Mechanics*.

First term: Lectures three hours a week, laboratory three hours alternate weeks.

A.P.S. Selvadurai

Engineering 82.429*

Highway Engineering

Highway planning, economics and finance; highway location and geometric design; traffic engineering; highway drainage and subgrade structure; structural analysis and design of rigid and flexible pavements; mineral aggregates; bituminous mix design; principles of frost action and applications to highway design.

Prerequisite: Third year registration.

Text: Oglesby and Hewes, *Highway Engineering*.

References: Ritter and Paquette, *Highway Engineering*; Woods, *Highway Engineering Handbook*; Yoder, *Principles of Pavement Design*.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

Engineering 82.430*

Structural Planning in Architecture

The nature of structural planning problems; general criteria in structural planning; functional, technical, economic and form considerations; loads, classification and estimation; building codes, fire resistance require-

ments; structural systems; various classifications; comparative study; integration of structural systems with other building systems; synthesis, preliminary analysis and evaluation of alternative structural schemes; case studies. (Also listed as Architecture 77.424*.)

Second term: Lectures three hours a week.

J. Adjeleian, S.G. Haider

Engineering 82.434*

Transportation

Introduction to the transportation planning process. The transportation system/environmental ensemble. Structuring transportation problems in a systems analysis framework. Problem recognition, problem definition, solution generation, solution analysis and evaluation. Planning urban transportation systems. Trip generation, trip distribution, modal split, and traffic assignment. Planning for other transport modes; air, rail, water, and pedestrian flows. Development of alternative transportation system proposals. Introduction to transport project and system economic evaluation. Environmental impact studies. (Also listed as Geography 45.434*.)

Prerequisite: Third year registration.

Text: Paquette, Ashford, Wright, *Transportation Engineering*, 1972.

Reference: Bruton, *Introduction to Transportation Planning*, 1970; Reynolds, *The Urban Transport Problem*, 1971.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

J.P. Braaksma

Engineering 82.435*

Transportation Geography

Offered as Geography 45.341*.

Engineering 82.437*

Hydraulics of Municipal Waste Water Systems

Hydraulics of sewers flowing partially full, flow in sewer junctions and transitions; estimates of amounts of sanitary and storm sewage; design of sewage collection systems; pumps, control, and measuring devices. Hydraulics of treatment processes, disposal problems.

Prerequisite: Engineering 88.332* and Fourth year registration.

Second term: Lectures three hours a week.

R.G. Warnock

Engineering 82.480*

Resources Planning

Introduction to the nature, characteristics, problems and theories related to the use of resources. Systematic approach to resources planning and management. Concepts and methods of analysis, evaluation, programming and resources allocation.

Text: De Neufville and Stafford, *Systems Analysis for Engineers and Managers*.

Second term: Lectures two hours a week.

A.M. Khan

Engineering 82.497**Engineering Project**

As a part of the Fourth year program, each student is required to select and complete a major project in engineering analysis, design, development or research. The objective is to provide an opportunity to develop initiative, self reliance, creative ability and engineering judgment. The results must be submitted in a comprehensive report with appropriate drawings, charts, bibliography, etc. Each student is required to submit his engineering project proposal to the Chairman of the Department of Civil Engineering on or before October 1.

Students enrolled in the Fourth year Civil Engineering Option may elect to satisfy the project requirements by successfully completing two workshop courses from Division B in the School of Architecture.

Note:

Students will register for their projects using course number 99.497. When the project has been approved, the student will change the registration at the Faculty Registrar's Office from 99.497 to the appropriate departmental number (82.497: 88.497: 94.497: 97.497).

Department of Mechanical and Aeronautical Engineering

Officers of Instruction

Chairman

H.I.H. Saravanamuttoo

Professor Emeritus

S.G. Tackaberry

Professors

M.C. de Malherbe

J.A. Goldak

G. Kardos

J. Lukasiewicz

D.A.J. Millar

W.J. Rainbird

J.T. Rogers

H.I.H. Saravanamuttoo

Associate Professors

A.N. Abdelhamid

M.J. Bibby

F.W. Black

R.J. Kind

J. Kirkhope

E.G. Plett

C.R. Thompson

J.Y. Wong

Assistant Professor

R. Bell

Adjunct Professors

Z.S. Basinski

R.E. Gagné

Sessional Lecturers

J.R. Baillot

A.J. Smialowski

Courses Offered

Engineering 88.100

Engineering Graphics and Design

Mechanical drawing: orthographic projection; auxiliary views; sections and conventions; oblique and isometric drawings; dimensions, notes, fits and tolerances; threads and fasteners; working drawings; mapping. Descriptive geometry: point, line and plane problems; intersections and developments. Engineering communication: data presentation by graphs and charts; pictorial sketching; introduction to design. Graphical solutions: slide rules; nomographs; graphical statics including solution to simple truss problems.

Both terms: Lectures and tutorials two hours a week, laboratory four hours a week.

F.W. Black, A.J. Smialowski, C.R. Thompson

Engineering 88.202*

Manufacturing Methods and Design

This course is intended to familiarize the student with common manufacturing methods, their economics and technical characteristics and the influence of production requirements on design. Methods discussed will include casting, forging, rolling and drawing, cutting, forming, and fabrication by welding, rivetting and bonding. The effect of selection of manufacturing method on permissible tolerances, materials and cost, and influence of quantity required on selection of method will be examined. Lectures will be supplemented by field trips and guest seminars.

Prerequisite: First year registration.

First term: Lectures and tutorials three hours a week.

J.R. Baillot, M.C. de Malherbe

Engineering 88.211*

Dynamics

Kinematics and kinetics of particles: rectilinear and curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods. Mechanical vibrations.

Prerequisites: Engineering 82.110 and Mathematics 69.107* and 69.117*.

Text: Beer and Johnston, *Vector Mechanics for Engineers: Dynamics*.

One term: Lectures three hours a week, problem analysis three hours a week. Offered both terms.

R. Bell, J.Y. Wong

Engineering 88.240*

Introductory Thermodynamics

Basic concepts of heat, work, temperature, property, state, system, control volume. The First Law for systems and control volumes with applications, properties of pure substances, phase diagrams. The perfect gas laws and relations. The Second Law and its corollaries, entropy from classical approach. Properties of gas mixtures.

Prerequisites: Mathematics 69.107* and 69.117* and Science 60.110.

Reference: Dixon, *Thermodynamics — An Introduction to Energy*.

One term: Lectures and tutorials three hours a week, problem analysis and laboratory three hours a week. Offered both terms.

A.N. Abdelhamid, R.J. Kind, H.I.H. Saravanamuttoo

Engineering 88.270*

Elements of Materials Engineering

The student is introduced to the structure of engineering materials and their behaviour in service and manufacturing. The topics presented are the following: the structure of engineering materials; the elastic and plastic behaviour of materials; alloys, phase-diagrams, solid solutions, eutectic and eutectoid materials; steels; heat treatment and strengthening mechanisms in metals and alloys; failure mechanisms.

Prerequisite: Science 60.110.

Text: Goldak, *Materials Engineering*; Bibby, *Materials Engineering Laboratory Manual*; Goldak, *Solutions to Problems in Engineering* 88.270.

One term: Lectures and tutorials three hours a week, problem analysis and laboratory three hours a week. Offered both terms.

M.J. Bibby, J.A. Goldak

Engineering 88.272*

Engineering Materials

A discussion of the general engineering basis for selecting materials in design including the material science principles, material stability, ease of fabrication and cost. The emphasis is on presentation of a general overall view of materials. Lectures will deal with ferrous and non-ferrous materials, woods, plastics, ceramics, concretes, rubbers, paints and composites.

Prerequisite: Engineering 88.270*.

Second Term: Lectures and tutorials, two hours a week, laboratory three hours alternate weeks.

M.J. Bibby

Engineering 88.301*

Measurement and Instrumentation in Engineering

Measurement principles and basic definitions; standards. Accuracy and error analysis; measurement statistics. Instrument systems; sensing devices, transmitting devices, terminating devices. Typical systems and devices for measuring quantities such as temperature, pressure, flow, size, displacement, velocity, acceleration, force, power, stress, and strain. Analog methods of measurement. Dynamics of measurement. Data presentation and curve fitting. Laboratory experience will be provided in the various laboratories of the Faculty.

Prerequisite: Third year registration.

Text: Holman, *Experimental Methods for Engineers*.

Second term: Lectures and tutorials two hours a week, laboratory and problem analysis two hours a week.

J. Kirkhope

Engineering 88.323*

Engineering Design Studies

The students' skills and knowledge will be focused on the study of several engineering problems through the media of case studies and innovative designs. The studies will involve the interrelationship of such factors as problem definition, feasibility studies, specifications, constraints, modelling, analysis techniques, evaluation, and production.

Prerequisite: Third year registration.

Second term: Lectures two hours a week, laboratories and seminar three hours a week.

C.R. Thompson and others

Engineering 88.332*

Introductory Fluid Mechanics

Fluid properties. Units. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy. Kinematics and dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Euler, Bernoulli, steady flow energy, momentum and moment

of momentum equations; applications. Introduction to Laminar and Turbulent flows.

Prerequisite: Third year registration.

Text: John and Haberman, *Introduction to Fluid Mechanics*.

First term: Lectures two hours a week, laboratory and problem analysis three hours a week.

F.W. Black, W.J. Rainbird

Engineering 88.333*

Fluid Mechanics and Heat Transfer

Review of the fundamental equations for one-dimensional ideal fluid flow, dimensional analysis and similarity, introduction to boundary layers, the causes of drag, one-dimensional steady isentropic flow, normal shock waves, open channel flow. One-dimensional steady heat conduction, elements of potential theory for steady two-dimensional heat conduction and fluid flow, analog methods, introduction to convection and radiation heat transfer.

Prerequisite: Engineering 88.332*.

Text: John and Haberman, *Introduction to Fluid Mechanics*.

Second term: Lectures three hours a week, problem analysis and laboratory three hours a week.

F.W. Black, W.J. Rainbird

Engineering 88.371*

Manufacturing Processes and Materials

Engineering I

Foundry processes; principles of sand casting, moulds, cores and patterns, shell, metal and plaster moulds, metallurgy and design of castings. Welding processes; gas, arc, resistance and thermit welding, gas and arc cutting, metal spraying, brazing and soldering. Heat treatment of steel, aluminum and nickel base alloys. Carburizing and nitriding processes. Powder metallurgy; compaction, sintering and design of powdered metal parts.

Prerequisite: Engineering 88.270*.

First term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

M.J. Bibby

Engineering 88.402*

Machine Design and Practice

The design of mechanical machine elements will be studied from a theoretical and practical point of view. Topics covered will be: design factors, fatigue, shafting, springs, gearing, bearings, flexible drive elements, brakes and clutches, fasteners and welded structures. Problem analysis will emphasize the application to real mechanical engineering problems.

Text: Deutschman et al: *Machine Design*.

First term: Lectures three hours a week, problem analysis three hours a week.

M.C. de Malherbe

Engineering 88.403*

Mechanical Systems Design

The course will emphasize the design of mechanical systems. Topics to be covered will include: establishing

design criteria, conceptual design, design economics, value analysis, synthesis, optimization. The problem analysis will involve synthesis of real life mechanical systems.

Prerequisite: Registration in Engineering 88.402*.

Text: French, *Engineering Design*.

Reference: Selected readings from *Machine Design*.

Second term: Lectures three hours a week, problem analysis three hours a week.

M.C. de Malherbe

Engineering 88.404*

Dynamics of Machinery

Kinematic and dynamic analysis and synthesis of mechanisms and machines. Design and analysis considerations in reciprocating and rotating machinery. Vibrations in machinery, vibrations of systems with more than one degree of freedom. Vibration and shock isolation. Experimental investigation of dynamic systems.

Prerequisite: Engineering 88.211*.

References: Martin, *Kinematics and Dynamics of Machines*; Thomson, *Vibration Theory and Applications*.

First term: Lectures two hours a week, laboratory three hours alternate weeks.

J. Kirkhope

Engineering 88.406*

Introduction to Vehicle Engineering

Performance characteristics, handling and ride qualities of road vehicles. Introduction to terra-mechanics. Design theory of ground vehicles.

Prerequisite: Engineering 88.211*.

References: Bekker, *Theory of Land Locomotion*; Cole, *Elementary Vehicle Dynamics*.

First term: Lectures two hours a week, problem analysis and laboratory three hours alternate weeks.

J.Y. Wong

Engineering 88.411*

Strength Analysis

This course is to extend the student's ability in design of machine structures. Selected topics from introduction to elasticity, shear bending, shear centre, residual stresses and stress concentration. Failure theories are discussed and related to the mechanism of failure, yielding, fatigue, brittle fracture and creep. Experimental determination of strength will be introduced.

Prerequisite: Engineering 82.322*.

Text: Juvinall, *Stress, Strain and Strength*.

Second term: Lectures two hours a week, problem analysis three hours alternate weeks.

R. Bell

Engineering 88.412*

Failure Analysis and Non-Destruction Testing

The course provides a basis for identifying the cause of a failure and guiding an engineer in altering design, manufacturing and operating conditions or in selecting an alternate material. The course describes: causes and consequences of failures; morphology of fracture

surfaces of ductile, brittle, fatigue, creep and corrosion failures; non-destructive testing with emphasis on radiography; defects in metals. Several important case histories are discussed.

Text: D.J. Wulpi, *How Components Fail*.

References: *Source Book in Failure Analysis*, ASM 1974; H. Thielsch, *Defects and Failures in Pressure Vessels and Piping*; Barer and Peters, *Why Metals Fail*. Second term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

J.A. Goldak

Engineering 88.414*

Vibration Analysis

Transient vibrations; multi-degree of freedom systems; the flexibility and stiffness matrix, Dunkerley's equation, orthogonality of principal modes, method of matrix iteration, Holzer type problems, branched systems. Continuous systems: longitudinal and torsional vibration of rods, lateral vibration of beams. Vibration measurements and experimental techniques.

Prerequisite: Engineering 82.322*.

Text: Thomson, *Theory of Vibration with Applications*. Second term: Lectures two hours a week, problem analysis and laboratory three hours alternate weeks.

J.Y. Wong

Engineering 88.430*

Control of Noise Pollution

Behaviour of sound waves. Selection of instrumentation. Practical acoustical measurements. Measurements of power level and directivity patterns. Sound propagation outdoors. Sound in small and large enclosures. Properties of porous acoustic materials. Transmission and radiation of acoustic waves by solid structures. Noise control in ventilation systems. Case histories of machine and shop quieting, office buildings and homes. Noise control in transportation.

Prerequisite: Third year registration.

References: Beranek, *Noise Reduction*; Harris, *Handbook of Noise Control*; Kinsler and Frey, *Fundamentals of Acoustics*.

Second term: Lectures two hours a week, laboratory and problems three hours alternate weeks.

A.N. Abdelhamid

Engineering 88.432*

Fluid Dynamics

Equations of fluid dynamics for elementary control volume in common coordinate systems. Incompressible nonviscous flow. Compressible steady non-viscous flow: isentropic one-dimensional flow, normal and oblique shock waves, expansion waves, wave interaction and reflection, introduction to unsteady flow. Viscous flow: Navier-Stokes equation, Poiseuille flow, Couette flow, hydrodynamic lubrication, boundary layers, Blasius solution, approximate methods and solutions, drag, boundary layer growth and stability, separation, control techniques.

Prerequisite: Engineering 88.333*.

Text: Duncan, Thom and Young, *Mechanics of Fluids*. References: Shapiro, *Dynamics and Thermodynamics*

of *Compressible Fluid Flow*, Volume 1; Eskinazi, *Principles of Fluid Mechanics*.

First term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

W.J. Rainbird

Engineering 88.435*

Fluid Machinery

Types of fluid machines. Dimensional analysis and similarity, performance parameters, performance characteristics, running points. Cavitation and water hammer. Velocity triangles, Euler pump and turbine equation, impulse and reaction. Radial-flow pumps, fans and compressors: analysis and design, surging, series and parallel operation. Radial-flow and mixed-flow turbines. Axial-flow pumps, fans and compressors: analysis and design by cascade and blade-element methods, staging, off-design performance. Axial-flow turbines. Fluid couplings and torque converters.

Prerequisite: Engineering 88.333*.

Text: Dixon, *Fluid Mechanics, Thermodynamics of Turbomachinery*.

References: Shepherd, *Principles of Turbomachinery*; Csanady, *Theory of Turbomachines*.

First term: Lectures two hours a week, laboratory three hours alternate weeks.

R.J. Kind

Engineering 88.437*

Mechanics of Flight

Elements of airplane aerodynamics; static stability and control. Performance analysis, including drag estimation, speed, payload, range, endurance, take-off and landing. Introduction to operating economics.

Prerequisite: Engineering 88.333*.

References: Dommasch, Sherby and Connolly, *Airplane Aerodynamics*; McCormick, *Aerodynamics of V/STOL Flight*.

Second term: Lectures and tutorials three hours a week.

R.J. Kind

Engineering 88.440*

Applied Thermodynamics

Mixtures of perfect gases and vapours, psychrometry, combustion processes, differences between real and ideal cycles, gas cycles and vapour cycles for power and refrigeration plant, principles of turbomachines.

Prerequisites: Engineering 88.240* and Fourth year registration.

References: Jones and Hawkins, *Engineering Thermodynamics*; Rogers and Mayhew, *Engineering Thermodynamics, Work and Heat Transfer*.

First term: Lectures three hours a week, laboratory three hours alternate weeks.

H.I.H. Saravanamuttoo

Engineering 88.441*

Power Plant Analysis

Criteria of merit; selection of power plant for transportation and power generation applications; interrelation between mechanical, thermodynamic and aerodynamic design processes; jet propulsion, turbojets and turbo-

fans; alternative proposals for vehicular power plant; combined cycle applications.

Reference: Cohen, Rogers and Saravanamuttoo, *Gas Turbine Theory*.

Second term: Lectures and tutorials three hours a week.

H.I.H. Saravanamuttoo

Engineering 88.443*

Energy Conversion and Power Generation

Energy sources and resources. Basic elements of power generation. Hydro-electric, fossil-fuel and fissile-fuel power plants. Other methods of conversion. Future methods of conversion. Economic and environmental considerations. Power generation systems. Future power needs.

Prerequisite: Fourth year registration.

Second term: Lectures two hours a week, problem analysis and laboratory three hours alternate weeks, power plant visits.

J.T. Rogers

Engineering 88.446*

Heat Transfer

An introduction to the mechanisms of heat transfer with emphasis on the basic fundamentals and practical solutions. Steady and transient conduction: solution by analytical and numerical methods as well as the electrical analog techniques. Convective heat transfer: free and forced convection for laminar and turbulent flows; heat exchangers. Heat transfer by radiation between black and grey surfaces, radiation shields, solar radiation. Boiling and condensation heat transfer. Selected applications including heat pipes and environmental heat transfer processes.

Prerequisite: Fourth year registration.

Text: Holman, *Heat Transfer, Third Edition*.

References: Chapman, *Heat Transfer*; Hsu, *Engineering Heat Transfer*.

Second term: Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

J.T. Rogers

Engineering 88.447*

Heating, Ventilating and Air Conditioning

Comfort. Environmental demands for residential, commercial and industrial systems. Methods of altering and controlling environment. Air distribution. Refrigeration methods, equipment and controls. Integrated year-round air-conditioning and heating systems; heat pumps. Cooling load and air-conditioning calculations. Thermal radiation control. Component matching. System analysis and design.

Prerequisite: Engineering 88.240* and Third year registration.

Text: Stoecker, *Refrigeration and Air-conditioning*.

Reference: Carrier, Chrene, Grant and Roberts, *Modern Air-conditioning, Heating and Ventilating*.

Second term: Lectures and tutorials two hours a week, problem analysis three hours alternate weeks.

Engineering 88.452*

Mechanical Feedback Control Systems

Mechanical, pneumatic, hydraulic and hybrid feedback control systems, analysis and synthesis. Transfer functions and stability analysis, using Laplace transforms and state-space. Laboratory exercises include setting up and analyzing pneumatic, fluidic and hydraulic control systems. Use of analog computers for simulating dynamic systems.

Prerequisites: Mathematics 69.201 and Engineering 94.361*.

Text: Raven, *Automatic Control Engineering, Second Edition*.

First term: Lectures two hours a week, laboratory three hours alternate weeks.

C.R. Thompson

Engineering 88.472*

Manufacturing Processes - Deformation

Yield theories, slip-line field theory applied to punching, extrusion, wire drawing, deep drawing and rolling. Powder metallurgy. Metal cutting-theory, cutting tool materials, cutting fluids, economics. Chemical and electrical machining processes.

Prerequisite: Engineering 88.270*.

Text: Backofen, *Deformation Processing*.

References: B. Avitzur, *Metal Forming: Processes and Analysis*; E.J.A. Armarego and R.H. Brown, *The Machining of Metals*.

Second term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

J.A. Goldak

Engineering 88.497

Engineering Project

As part of the Fourth year program, each student is required to select and complete a major project in engineering analysis, design, development or research. The objective is to provide an opportunity to develop initiative, self reliance, creative ability and engineering judgment. The results must be submitted in a comprehensive report with appropriate drawings, charts, bibliography, etc. Each student is required to submit his engineering project proposal to the Chairman of the Department of Mechanical and Aeronautical Engineering on or before October 1.

Note:

Students will register for their projects using course number 99.497. When the project has been approved, the student will change the registration at the Faculty Registrar's Office from 99.497 to the appropriate departmental number (82.497: 88.497: 94.497: 97.497).

Officers of Instruction

Chairman
D.C. Coll

Computing Science Co-ordinator
R.J.A. Buhr

Professors
B.A. Bowen
D.C. Coll
D.A. George
M.A. Gullen
M.E. Ulug

Associate Professors
R.J.A. Buhr
J.K. Cavers
L.R. Morris
J.E. Neilson
B. Pagurek
J.S. Riordon
C.M. Woodside

Assistant Professors
W.R. Bezañson
W.R. Lalonde
S.A. Mahmoud
I. Reichstein

Adjunct Professors
J. de Mercado
C. Kropp
P. Nador

Sessional Lecturers
T.A.G. Gavin
G.M. Matthews
R.A. Parson
B.C. Searle
C.D. Stothart
D.J. Sutherland
K. Weiss

Courses Offered

Engineering 94.165

Introduction to Computers

The digital computer. Number systems, representation of numbers, introduction to machine language programming and computer operation. The algorithmic approach to engineering problem solving. Programming in time-shared and batch FORTRAN. Introduction to the Sigma-9 executive. Extensive examples and problems from engineering and mathematics: iterative solutions, sorting, summing, statistics, interpolation, solution of linear and differential equations, simulation, etc.

Text: Bergman and Bruckner, *Introduction to Computers and Computer Programming*.

References: Various manuals relating to usage of the university computer.

Both terms: Lectures and tutorials two hours a week, workshop two hours a week.

J.E. Neilson, I. Reichstein

Engineering 94.205*

Industrial Engineering I

This course introduces the fundamentals underlying rational decision-making in large engineering systems. Concept and scope of industrial engineering methods. Static optimization: steepest descent and quadratic convergence strategies. Linear programming: the simplex method, computational aspects, duality. Network analysis; finite graphs; critical path scheduling. Applications will be emphasized.

Prerequisite: Concurrent registration in Mathematics 69.201.

Reference: Shamblin and Stevens, *Operations Research*.

First term: Lectures and tutorials three hours a week.

J.S. Riordon

Engineering 94.303*

Real-Time Computing Systems

An introduction to the use of minicomputers as real-time, interactive systems, with the PDP-11 and PDP-8 as examples. Computer organization: structure, representation of instructions, numbers, and characters; addressing modes, arithmetic and logical operations. Programming techniques: assembly language coding and interfacing to high level languages. Input/output: via program control, priority and vectored interrupts, and direct memory access. Peripherals: teletype, register, programmable clock, analog/digital converters, interactive graphics processor. (Also listed as Computing Science 95.303*).

References: R. Eckhouse, *Minicomputer Systems: Organization and Programming (PDP-11)*.

One term: Lectures two hours a week, laboratory two hours a week. Offered both terms.

R.J.A. Buhr, L.R. Morris

Engineering 94.305*

Industrial Engineering II

Engineering decisions in the face of uncertainty. Simple decision trees. Bayesian estimation. Recursive formulation of multi-stage problems. Stochastic programming. Introduction to dynamic programming. Introduction to queues. Applications to the operation of engineering systems.

Prerequisite: Engineering 94.205*.

References: Wagner, *Principles of Operations Research*; Au, Shane, Hoel, *Fundamentals of Systems Engineering, Probabilistic Models*.

Second term: Lectures three hours a week.

B. Pagurek

Engineering 94.310*

Systems Analysis

Introduction to the concepts and techniques of problem definition and analysis. Various approaches to system identification, specification and presentation will be discussed. Students will work in teams to test their analysis skills on case studies of information systems. Systems analysis tools: decision tables, flow charts, Gantt charts, activity networks, costing. Data and file description: forms-oriented techniques, languages. Document description. Phases in a project: feasibility study, input/output analysis and design, document and file design, system design implementation and project control. The course will emphasize applications in computer-based information systems, but the techniques used are of wider applicability. (Also listed as Computing Science 95.310*.)

Reference: Gore and Stubbe, *Elements of Systems Analysis*.

Prerequisite: A full First year course in Computing Science.

First term: Lectures three hours a week.

J.S. Riordon

Engineering 94.361*

Systems and Machines

Linear dynamic models of engineering systems with emphasis on the electrical machine as a system element. Characteristics of transformers and electro-mechanical energy convertors. Properties of linear systems. Applications of Laplace transforms, block diagram manipulations. Effects of feedback on system response. System simulation with analog and digital computers.

Prerequisites: Engineering 97.251*, Physics 75.233*.

Text: Course notes; Edwards, *Electrical Machines*; diSteffano, et al, *Feedback and Control Systems*.

Second term: Lectures and tutorials four hours a week, laboratory three hours a week.

D.C. Coll, S.A. Mahmoud

Engineering 94.362*

Electric Power Circuits and Machines

Single phase and three phase A.C. circuits: phasors, voltage, current, and power calculations, flicker, power factor correction, asymmetry, star and delta configurations. Power measurement and rate structures. Single phase transformer: construction, theory of operation and equivalent circuit, OC/SC tests, three phase connections, name plate data and specifications. Three phase induction motor and synchronous motor: construction, theory and operation and equivalent calculations, starting. Discussion of single phase motors.

Prerequisite: Engineering 94.361* or concurrent registration.

Text: Printed lecture notes.

Second term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

C.F. Kropp

Engineering 94.366*

Computer Applications

Analysis of engineering problems with the use of the digital computer including mathematical modelling organization of the equations and methods of solution using analytical and numerical methods. Topics in numerical methods include: solution of single algebraic and transcendental equations and sets of linear algebraic equations, determination of eigenvalues and eigenvectors; curve fitting by difference and least squares methods; numerical integration, differentiation; solution of ordinary and partial differential equations. These methods are illustrated by application to typical engineering problems. An important part of the course is the use of the computer.

Prerequisites: Third year registration in Engineering or Physics, and an introductory programming course in Fortran.

Text: Southworth and Deleu, *Digital Computation and Numerical Methods*.

References: James, Smith and Wolford, *Applied Numerical Methods*; Crandall, *Engineering Analysis*.

One term: Lectures and tutorials three hours a week. Offered both terms.

I. Reichstein

Engineering 94.405*

Discrete Simulation and its Applications

The purpose of this course is twofold: to teach simulation as a problem-solving tool, and to introduce a number of important systems problems using simulation as a vehicle. Discrete system models, and the formulation of models for simulation. Programming in the GASP and GPSS simulation languages. Applications to queuing situations, computer system scheduling, inventory systems, scheduling by decision rules and by PERT networks, transportation systems, computer-communications networks.

Prerequisite: Fourth year registration or permission of the instructor.

Text: Pritsker and Kiviat, *Simulation with GASP II*.

References: Gordon, *System Simulation*; Emshoff, Sisson, *Design and Use of Computer Simulation Models*.

Second term: Lectures three hours a week, problem analysis one hour a week.

C.M. Woodside

Engineering 94.415*

Engineering Management

An introductory and overview course on modern management concepts; material is presented through lectures, seminars and case studies. Historical review. Basic elements, tasks, functions, and activities of the management process including planning, organizing, staffing, directing and controlling. Dilemmas and constraints. Management style. On completing the course the student should be able to: read and constructively criticize management literature; discuss "management" with experts in a rational manner; appreciate the management basis of the first engineering work situation.

Prerequisite: Fourth year registration.
Evening division, First term: Lectures two hours a week, seminars three hours alternate weeks.
C.D. Stothart

Engineering 94.451*

Communication Systems

Representation of signals; Fourier series; Fourier transforms; Laplace transforms; time and frequency convolution. Amplitude modulation theory, circuits and systems; single sideband; vestigial sideband. Operational mathematics for non-stochastic signals; correlation; energy spectra. Sampling theorem; time division multiplexing; discrete Fourier transforms. Angle modulation; phase and frequency modulation theory, circuits and systems. Television and facsimile waveforms, spectra and modulation methods. Characteristics and uses of classical, transversal and recursive filters. Noise in circuits and systems. Pulse code modulation and delta modulation.

Text: Taub and Schilling, *Principles of Communication Systems*.

References: Carlson, *Communication Systems*; Lathi, *Communication Systems*.

Second term: Lectures three hours a week, laboratory three hours alternate weeks.

W.J. Chudobiak

Engineering 94.455*

Automatic Control Systems I

Review of Laplace transform methods in linear systems. State variable representation: state transition matrix as a linear transformation, eigenvalues and eigenvectors. Stability criteria of Hurwitz, Nyquist. Root locus. Control system design objectives. Compensation networks and state variable feedback.

Prerequisites: Mathematics 69.201 and Engineering 94.361*.

Text: D'Azzo and Houpis, *Linear Control System Analysis and Design*.

First term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

C.M. Woodside

Engineering 94.456*

Automatic Control Systems II

Introduction to non-linear feedback control systems, state-space approach, phase-plane analysis, sampled data systems, performance criteria. Introduction to optimal and adaptive control theory. The laboratory exercises involve designing and analyzing a non-linear feedback control system and major emphasis is placed on project work.

Prerequisite: Engineering 94.452* or 94.455*.

References: Dorf, *Modern Control Systems*; Rabin, *Automatic Control Engineering*; Elgerd, *Control Systems Theory*.

Second term: Lectures two hours a week, laboratory three hours alternate weeks.

C.R. Thompson

Engineering 94.457*

Introduction to the Architecture of Computer Systems

A typical mini-computer is designed and variations incorporated to illustrate the hardware-software trade-offs often encountered. Bus oriented systems and bus protocols: autonomous peripherals, arbitrators, and multiprocessing. Systems controllers on studied machines, including ROMs. Cache memory design, memory hierarchies, bus design parameters, parallel computers, input-output structures, associative memory applications, pipe line architectures. The interconnection of machines via standard communication facilities. Finally, the latest papers on distributed function architectures will be used as project assignments. (Also listed as Computing Science 95.457*.)

Prerequisite: Engineering 94.466*.

Second term: Lectures three hours a week.

B.A. Bowen

Engineering 94.461*

Programmable Logic Systems

Introduction to micro-computer Architecture. Characteristics and applications, major features of current systems. Techniques of micro-programming, examples of input/output, use of subroutines, arithmetic subroutines, logical operations, delays, time outs, holds, etc., discussion of programming languages and assemblers. Design studies will be selected from calculators, interface controllers, intelligent terminals, graphics, compilers, etc., economics and technical decisions in selecting and implementing a micro-computer system. (Also listed as Computing Science 95.461*.)

Prerequisite: Engineering 94.466*.

References: Assigned papers and notes.

Second term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

B.A. Bowen

Engineering 94.466*

Switching Circuits

Introduction: Gates, coding, iterative circuits, state concepts. Combinational circuit design: Canonical forms, switching algebra, maps, multiple output networks, wired-OR networks. Memories: latch, flip flop, shift register, RAM and ROM. Sequential circuitry: Synchronous counter design, circuits having inputs, asynchronous counters and scalars. Special purpose structures: timing and mode circuitry, pipeline organization, serial organization, small computer characteristics including interfacing, input/output considerations.

Prerequisite: Third year registration or permission of the instructor. (Also listed as Computing Science 95.466*.)

Text: Peatman, *The Design of Digital Systems*.

One term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks. Offered both terms.

M.E. Ulug

Engineering 94.480*

Introduction to Software Engineering

This course introduces students to the problems and methods of specifying, designing, and producing correct, structured, and modular software. Topics to be discussed include: programming style, structured programming, top down and bottom up programming, chief programmer team concepts, information "hiding" approaches, table driven techniques, decision tables, debugging strategies, and techniques for proving programs correct. Students will normally take Engineering 94.481* in conjunction with this course. (Also listed as Computing Science 95.480*.)

Prerequisite: Permission of the instructor.

Texts: Kernighan and Plauger, *The Elements of Programming Style*; McGowan and Kelly, *Top Down Structured Programming Techniques*.

First term: Lectures three hours a week.

W.R. Lalonde

Engineering 94.481*

Software Engineering Project

Students will participate in a team project to develop a small piece of stand-alone software in an organized and structured fashion. Non-numeric applications will be emphasized. All phases of the project will be considered equally important: design, implementation, testing, and documentation. (Also listed as Computing Science 95.481*.)

Prerequisite: Engineering 94.480* or concurrent registration in Engineering 94.480*.

One term: Offered both terms.

D.C. Coll

Engineering 94.497

Engineering Project

As part of the Fourth year program, each student is required to select and complete a major project in engineering analysis, design, development or research. The objective is to provide an opportunity to develop initiative, self reliance, creative ability and engineering judgment. The results must be submitted in a comprehensive report with appropriate drawings, charts, bibliography, etc. Each student is required to submit his engineering project proposal to the Chairman of the Department of Systems Engineering on or before October 1.

Note:

Students will register for their projects using course number 99.497. When the project has been approved, the student will change the registration at the Faculty Registrar's Office from 99.497 to the appropriate departmental number (82.497: 88.497: 94.497: 97.497).

Officers of Instruction

Chairman

A.R. Boothroyd

Professors

A.R. Boothroyd

M.A. Copeland

V. Makios

Associate Professors

W. Chudobiak

J.P. Knight

R.E. Thomas

P.D. van der Puije

Assistant Professors

C.H. Chan

J.S. Wight

Sessional Lecturer

S. Entwistle

Courses Offered

Engineering 97.251*

Circuits and Signals

Nature and properties of signals. Circuit elements: definitions and basic properties. Voltage and current sources. Kirchhoff's laws, linearity and superposition. Thevenin and Norton Theorems: Resistance circuits, AC signals; phasors. AC steady state analysis: impedance, admittance and transfer properties; frequency response; detailed treatment of first order (RL and RC) circuits. Thevenin and Norton Theorems. AC steady state analysis; circuit reductions. Transient response: first order circuits, form of response; initial and final condition; relation to AC steady state properties. Properties of LCR circuits: AC steady state response; resonance.

Prerequisite: Concurrent registration in Mathematics 69.201.

Text: Williams, *Introduction to Electrical Circuit Theory*.
Second term: Lectures and tutorials three hours a week, laboratory and problem analysis three hours a week.

A.R. Boothroyd, V. Makios, P.D. van der Puije

Engineering 97.357*

Electronics I

An introductory course which treats the simpler aspects of electronics. Topics covered are: semi-conductor diodes; theory and applications. Bipolar transistors; theory, application in control circuits and linear amplifier design. Integrated circuits; linear integrated circuits, operational amplifier applications. Application of digital circuits; combinatorial and elementary sequential digital circuits.

Prerequisites: Engineering 97.251*; Mathematics 69.201 (may be taken concurrently).

Text: Oldham and Schwartz, *An Introduction to Electronics*.

First term: Lectures and tutorials four hours a week, laboratory and problem analysis three hours a week.

W.J. Chudobiak, J.S. Wight

Engineering 97.453*

Electromagnetic Transmission and Radiation

Introduction to guided waves. Transient and steady-state solution of the transmission line equations. Properties of transmission lines, standing waves, impedance; effect of loading. Impedance charts, matching techniques. Lines at radio frequencies. Lines at power frequencies. Waveguides and cavities. Radiation from charge and current distributions, antennas. Near and far field of a radiator, approximations. Wire antennas, gain directivity. Introduction to arrays and apertures. Laboratory on microwave measurements and techniques.

Prerequisite: Engineering 97.454*.

Text: Kraus and Carver, *Electromagnetics*.

Second term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

J.S. Wight

Engineering 97.454*

Electromagnetic Fields

Vector analysis; gradient, divergence, curl and Laplacian. Divergence theorem, Stokes theorem, Maxwell's equations. Electrostatic fields, Coulomb's law, Gauss' law, Poisson and Laplace equations. Image and iteration techniques. Boundary value problems. Force and energy. Magnetostatic fields, Ampere's law, Biot-Savart law. Time varying fields, skin effect. Reflection and refraction of plane waves.

Prerequisites: Mathematics 69.201 and Physics 75.233*.

Text: Kraus and Carver, *Electromagnetics*.

First term: Lectures and tutorials three hours a week.

V. Makios

Engineering 97.458*

Electronics II

The transistor is described in terms of its major characteristics when employed as a linear active device in signal amplification. Biasing, temperature compensation, bandwidth limitation are treated as well as class A, class B and class C amplifiers. Frequency multipliers, feedback leading to the design of oscillators, modulation and demodulation completes the linear part of the course. The use of the transistor as a switch in Schmitt Triggers, multi-vibrators, NOR, and NAND gates is discussed. Frequency division, shift registers and counters are treated. The application of other devices, such as 4-layer diodes, SCR and UJT's is included. The laboratory is completely project oriented and each student is expected to design and construct four circuits to meet given specifications.

Prerequisite: Engineering 97.357*.

Text: Millman and Halkias, *Integrated Electronics*.

References: Millman and Taub, *Pulse, Digital and Sampling Waveforms*; Seeley, *Electronic Circuits*.

First term: Lectures and tutorials three hours a week, laboratory four and a half hours a week.

P.D. van der Puije

Engineering 97.468*

Solid State Electronics

Fundamentals of solid state physics. Injection and current flow processes in a semiconductor. Theory of the p-n junction; diode mechanism and characteristics. Bipolar transistor; internal theory, DC characteristics, charge control, Ebers-Moll relations; high frequency and dynamic properties, hybrid- π model. Device fabrication technology. Field effect transistors. Integrated circuits. Special purpose devices. Laboratory gives introduction to aspects of device mechanisms, characterization and fabrication technology.

Prerequisite: Engineering 97.357*.

Text: S.E.E.C., Volume II.

Reference: S.E.E.C., Volume I.

First term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

M.A. Copeland

Engineering 97.469*

Semiconductor Devices and Circuits

Fabrication processes for integrated circuits and discrete semiconductor devices: monolithic silicon planar process, thin film processes. Properties and design considerations for devices made by these processes: diodes, bipolar transistors, junction and insulated gate field effect transistors, resistors and capacitors. Design philosophies for integrated circuits. Linear and digital integrated circuit design examples. Project work involves the design and fabrication of integrated circuits.

Prerequisite: Engineering 97.468*.

References: Warner and Fordemwalt, *Integrated Circuits*; Grove, *Physics and Technology of Semiconductor Devices*.

Second term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

R.E. Thomas

Engineering 97.475*

Electronic Properties of Materials

Electrical conduction and conductor materials; electrical insulators and dielectrics including ceramics, plastics, rubbers and composite materials; printed circuit and thin film techniques; electrical emission and emitter materials; magnetism and magnetic materials; optical properties including photographic images and luminescence; optical materials; electronic packaging materials.

Prerequisites: Engineering 88.270* and 97.251*.

Reference: Rose, Shepard and Wulff, *The Structure and Properties of Materials, Volume IV, Electronic Properties*.

Second term: Lectures and tutorials, two hours a week, laboratory three hours alternate weeks.

S. Entwistle

Engineering 97.478*

Integrated Circuit Electronics

The course is concerned with the properties of digital and linear integrated circuits as circuit blocks and their application as components of larger systems. Aspects of design in terms of integrated circuits for the realization of required system functions are treated. An important part of the course is the laboratory in which students gain experience of the use of integrated circuits in project activities.

Prerequisite: Engineering 94.466*.

References: Carr and Mize, *MOS/LSI Design and Application Handbook*; Blakeslee, *Digital Design with Standard MSI and LSI*; Burr-Brown, *Operational Amplifiers, Design and Applications*.

Second term: Lectures and tutorials two hours a week, laboratory three hours alternate weeks.

C.H. Chan, M.A. Copeland

Engineering 97.497

Engineering Project

As part of the Fourth year program, each student is required to select and complete a major project in engineering analysis, design, development or research. The objective is to provide an opportunity to develop initiative, self reliance, creative ability and engineering judgment. The results must be submitted in a comprehensive report with appropriate drawings, charts, bibliography, etc. Each student is required to submit his engineering project proposal to the Chairman of the Department of Electronics on or before October 1.

Note:

Students will register for their projects using course number 99.497. When the project has been approved, the student will change the registration at the Faculty Registrar's Office from 99.497 to the appropriate departmental number (82.497: 88.497: 94.497: 97.497).

Officers of the School

Director

D. Shadbolt

Associate Director

J.W. Strutt

Professors

M.R. Coote

D. Moizer

D. Shadbolt

H. Sharon

J.W. Strutt

Associate Professors

C.T. Aasen

R.G. Brand

R. Burton

J. Flanders

S.G. Haider

M. Hancock

E. Kayari

G.D. Milne

R.E. Osler

G.F. Sutton

D. Westwood

Visiting Associate Professor

E. Ali-Oglu

Assistant Professors

G. Andonian

F. Carter

R. Kuris

S. Loten

J. Mather

S. Shubin

Sessional Lecturers

I. Clapperton

J.-M. Comeau

W. Dawson

M. Lundholme

P. Nicholson

C. Rioux

M. Stiles

W. Throop

D. Wren

Photographic Supervisor/Instructor

H. Schade

Advisory Council

Douglas Shadbolt, *Chairman/Secretary*

Michael de Malherbe, *Dean of Engineering*

D'Arcy Helmer, *Architect, Ottawa*

Ian MacLennan, *Vice President, Central Mortgage and*

Housing Corporation

Guy Desbarats, *Assistant Deputy Minister (Design*

Services) Dept. of Public Works, Canada

Michael Oliver, *President of the University*

W.J. Thomas, *Architect, Ottawa*

R.A. Wendt, *Dean, Faculty of Social Sciences*

Bachelor of Architecture Degree Program

The Bachelor of Architecture degree is awarded on successful completion of a five-year program of studies. The curriculum in Architecture at Carleton is expected to provide the student with:

1. an understanding of our society with an emphasis on the identification of its building problems ranging from those of rudimentary shelter to the City itself, past, present and future (the contributions of many other disciplines will be made to enhance this understanding, e.g. Sociology, Anthropology, Psychology, History, Geography, Political Science, Economics);

2. the means to analyse problems and experience in solving aspects of a wide range of building problems (the evolving design methodologies, systems analysis and the use of computers will all be relevant here);

3. the means for development of individual ability to communicate, to define problems, to develop creative strategies and solutions to problems of built environments;

4. the technical and professional information and skill needed to transform the student's designs into completed buildings;

5. the opportunity to explore one or two subject areas in considerable depth, thus allowing the student to develop the beginnings of a specialized career within the broad field of architecture, e.g. administration and management, environmental control.

The curriculum will provide a highly varied experience for the student in lectures, seminars, projects and workshops. The emphasis on the program will be placed on individual growth and development. Insofar as it is feasible a large part of the student's contact with the teaching staff will be on a one-to-one basis.

The resources of the Ottawa area, including those of Carleton University, are unique in their concentration of specialized personnel, laboratories, libraries and other facilities. They provide the opportunity and capability for a wide range of multi-disciplinary academic and research programs in such fields of architecture as housing, urban environmental studies and industrialized building.

Admission Requirements

First Year

To be eligible for admission to the First year of the program of studies leading to the Bachelor of Architecture degree, the applicant must have passed the Qualifying University year examinations at Carleton

University in five courses with a minimum grade point average of 4 and a grade of C- or better in Mathematics and in Physics; or he must present the Ontario Secondary School Honour Graduation Diploma with a minimum 60% average and including Functions, Calculus and Physics.

Refer to the section on Admissions in the General Regulations of the Calendar for additional admissions information (pp. 25-30).

Advanced Standing

Applications for admission with advanced standing to the Second or subsequent years of the program leading to the Bachelor of Architecture degree will be evaluated on an individual basis. Advanced standing for academic subjects completed at another university or college will be accepted if the subject is recognized as the equivalent of a corresponding subject offered at Carleton.

Selective Admission

It should be noted that the number of student spaces in the School is limited. Because of this we expect that it may not be possible to grant admission to all applicants who meet the above requirements. Admission will therefore be on a selective basis with preference given to those candidates who show the highest promise of success in the course. Members of the Admissions Committee of the School of Architecture are available by appointment during the academic year to answer enquiries regarding the School's program.

The Organization of the School

Six divisional committees have been established, each responsible for areas of study related to the curriculum of Architecture.

The divisions are responsible for integrating the content of their area with that of the other divisions.

The interdisciplinary nature of certain subject areas will be of interest to students outside the School of Architecture. The involvement of faculty and students from other disciplines in these courses is actively encouraged. At the same time, Architecture students are encouraged to take courses in other disciplines across campus as part of their educational program.

■ Colloquium Division

Relations between the Self and the Environment

■ Division A

History and Theory
Human Sciences
Environmental Sciences

■ Division B

Structures
Environmental Controls
Materials and Methods of Construction
Design Economics

■ Division C

General Planning
Policy Planning and Community Development
Management and Development
Professional Practice

■ Division D

Computations
Design Methodology
Design Education
Communications

■ Design Division

Course Requirements

Commencing in the 1976-77 session, the School of Architecture adjusted its course offerings to make its courses equivalent in weight, assignment load, expectations, etc. with those in other departments and faculties to facilitate easier transferability of credit, timetabling, etc. based on a norm of three hours lectures per week for two academic terms as being *one* full course. All courses can thus be described as a fraction (e.g. one-half) or a multiple (e.g. two) of the basic course weight. In the following charts:

- (a) all workshop courses are half courses (six hours a week for one term);
- (b) all concentration electives are half courses (three hours a week for one term);
- (c) design lecture courses are full courses (three hours a week for two terms);
- (d) design seminars are half or full courses dependent on whether they run for six hours a week for one or two terms;
- (e) the minor stream thesis is two full courses;
- (f) the terminal project is two full courses.

Course Program

The program of study is outlined in the following charts and detailed course descriptions appear on pp. 19-198 inclusive. The program is based on a workload of six full course equivalents for five years. All

programs are subject to change according to the final availability of resources at the time of registration.

Seminar time and the staff preparation time allocation can, in some situations, be combined to provide some tutorial instruction.

First Year

| Term 1 | Term 2 |
|--|---|
| 69.120* Theories of Architectural Design 1 | 76.102* Colloquium 1 |
| 7.101* Environmental Controls 1 | 79.111* Introduction to Algorithmic Problem Solving |
| 7.130* Building Construction 1 | 77.111* Structures 1 |
| Elective | 79.101* Mathematics in Architecture 1 |
| 0.101 Design I | |
| 0.102 Design Seminar I | |

Students accepted into the program in Architecture will be given a problem book in Mathematics during the summer preceding their first registration and will write a proficiency test on this material during the first week of the First term. Those who fail will be required to enrol in Mathematics 69.106*.

Second Year

| Term 1 | Term 2 |
|---|--|
| 69.201* The City in Context | 76.202* Colloquium 2 |
| 7.200* Environmental Controls 2 | 77.230* Building Construction 2 |
| 7.210* Structures 2 | 79.201* Mathematics in Architecture 2 |
| 7.300* Problem Solving Methods and Models 1 | 76.203* Theories of Architectural Design 2 |
| 0.201 Design 2 | |
| 0.202 Design Seminar 2 | |

It is recommended that the Second year Elective be chosen from courses offered by other departments of the University. However, a list of courses offered by the school and designated as suitable for this purpose will also be available.

Third Year

| Term 1 | Term 2 |
|--|----------------------------|
| 69.308* Theories of Architectural Design 3 | 76.301* Colloquium 3 |
| Concentration Electives* | 2 Concentration Electives* |
| Workshop Elective | 1 Workshop Elective |
| 0.303* Design 3A | 80.305* Design 3B |
| 0.304* Design Seminar 3A | 80.306* Design Seminar 3B |

Fourth Year

| Term 1 | Term 2 |
|--|--|
| 76.401* Colloquium 4 | 76.408* Theories of Architectural Design 4 |
| 2 Concentration Electives* | 2 Concentration Electives* |
| 1 Workshop Elective | 1 Workshop Elective |
| 80.402* Design 4A | 80.404* Design 4B |
| 80.403* Design Seminar 4A | 80.405* Design Seminar 4B |
| *Courses offered by other Departments of the University may be substituted for the Concentration Electives appearing on pp. 192-194 inclusive, where these are appropriate and contribute to an overall pattern of elective courses and workshops that has been approved as a Minor Stream by the Student's Adviser. | |

Fifth Year (see Final year, p. 187)

| Term 1 | Term 2 (Option A) |
|---|--|
| 76.451* Contemporary Issues in Architecture | 78.320* Professional Practice |
| 2 Concentration Electives | 2 Concentration Electives |
| 1 Workshop Elective | 1 Workshop Elective |
| 80.452* Design 5 | |
| 80.453* Design Seminar 5 | 80.454 Design Seminar (Selected Project) |
| Term 1 as above | Term 2 (Option B) |
| | 78.320* Professional Practice |
| | 1 Concentration Elective or 1 Workshop Elective |
| | 80.491 Terminal Project (Two credits) |
| Term 1 as above | Term 2 (Option C) |
| | 78.320* Professional Practice |
| | 1 Concentration Elective or 1 Workshop Elective |
| | Minor Stream Thesis (Two credits) (one of 76.489, 77.489, 78.489, 79.489) |

dependent Study

student enrolled in the Bachelor of Architecture program may propose, and may be permitted to undertake an independent study in lieu of elective courses up to the equivalent of one full course in the Third, Fourth or Fifth year.

The purpose of this provision is to allow more flexibility for students to pursue a line of investigation in their own way, free of normal constraints of timetable and university locale. The independent study at the undergraduate level is to make no demands on University faculty other than those required for approval and evaluation.

In certain cases, with the approval of the department in which he is registered, a graduate student enrolled in another program at the University may be permitted to enroll in a Fourth year level Independent Study under the direction of a member of the faculty of the School. The procedures and conditions will be detailed and approved jointly by the student, his department, and the adviser in the School.

Serious scholarship and research are expected and proper documentation will be required. In the case of students in Architecture, the study will be subject to the following conditions:

- 1. The Student's standing must be clear with no deficiencies in required courses.

- 2. The student will register for an independent study in the term or session during which the work is to be completed. The student must submit the proposal in writing to the adviser at the time of registration outlining the objectives and direction of the study, the time and locale, resources available, submission date and other pertinent information. The subject area of the study should be identified with respect to the interests of the organizational divisions of the School of Architecture.

- 3. The student must have obtained the prior approval of the appropriate divisional committee and the prior agreement of a member of the teaching staff in that division to act as assessor for the study, that staff member will then be responsible for approval and evaluation. The divisional committee chairman's written recommendations, comments, and the credit value to be given for the study must accompany the proposal when presented to the adviser for course approval.

- 4. The study must be completed within the specified time and in a form agreed upon by the student and the divisional assessor.

- 5. The student's adviser will deliver the completed and approved proposal to the Records Office of the School of Architecture to be filed with the student's course records.

Final Year

(i) General

Before the end of the session preceding the final year of the program, the student will enter into discussion with the adviser and select one of the options as outlined in the charts. Depending on the option chosen, the student and the adviser will first select topics, then select tutors for the Terminal Project or the Minor Stream Thesis. Lists of tutors will be prepared by divisional chairmen and made available. The students and tutors will prepare brief written proposals to be submitted for discussion and approval by the appropriate divisional committees. At the time of registration in the Fifth year, course approval in these courses will be granted only upon submission by the student to the adviser of the written proposals approved as above. The adviser will then deliver the proposals to the Records Office of the School of Architecture to be filed with the student's course records.

(ii) Terminal Project

Following registration in the final year, the student will work independently throughout the Second term, subject to weekly sessions with the tutor and monthly presentations to a review committee. The review committee will be comprised of three faculty members, one of whom will be the tutor. The student will define the process by which the necessary research and development will be undertaken and prepare a report which will follow guidelines established by the Studio Division. The Terminal Project will be due on the last day for handing in term assignments in the Second term.

The review committee will evaluate the Terminal Project and it will be graded pass or fail. Those students whose Terminal Projects have been graded Pass will prepare for an oral and visual presentation in a public review open to all faculty, students and visitors. This will take place within three weeks after the last day of classes. Subsequent to this review a letter grade will be determined.

(iii) Minor Stream Thesis

The Minor Stream Thesis represents a conclusive statement for those students chiefly interested in integrating the work they have been doing in the Minor Stream. The thesis must put forward conclusions which show clear evidence of individual work and independent analysis of the subject area. The thesis may be considered as approximately equivalent to two full courses.

Following registration in the Fifth year, the thesis student will work independently throughout the Second term subject to weekly sessions with the tutor, a monthly review before a review committee of at least three persons comprising the tutor, the appropriate divisional chairman and a third faculty member chosen jointly by the student and the thesis tutor and approved by the divisional chairman. (In the event that the thesis tutor is also the divisional chairman, the student and the

divisional chairman will select another committee member.) With the approval of the divisional chairman, one of the three members of the Committee may be selected from outside the School of Architecture. The thesis will be due on the last day for handing in term assignments specified in the University Calendar for Second term. The thesis will be typewritten and otherwise presented according to an agreed format and submitted in two copies to the thesis tutor and the appropriate divisional chairman.

The thesis review committee will evaluate the thesis and grade it Pass or Fail. Those theses graded Pass will be made available in the School's Technical Data Room for three weeks, to other faculty, students and interested persons for their criticism to be taken into account in establishing the final letter grade.

General Information

Counselling and Course Pattern Approval

During the First term of the First year and for the remainder of the course, each student will be assigned a full-time faculty member as adviser who will enter into discussions with the student to assist in defining educational objectives and helping to select the individual courses of study leading to completion of the program. Advisers may be changed with the consent of the Director. A document entitled *Recommended Course Patterns for the Elective Program 1977-78* can be referred to in the School's Technical Data Room and is intended for use by the students and their advisers as guidelines for the selection of elective courses.

The adviser will thereafter be responsible for approving the course pattern and course changes of the assigned individual students.

Materials, Supplies and Field Trips

The program in Architecture, particularly the studio course, requires that the student produce large quantities of drawings and models, as well as ozalid prints, photostats, and other photographic media, reproductions of drawings, reports, etc. all of which can be costly. While the instructors are careful to keep the required presentations to a minimum, the student is free to, and does, experiment with many techniques and media, some of which are expensive. The School provides some of this material but the student is expected to absorb the larger portion of the cost and should budget accordingly.

Equipment for drawing, photography, etc. should be regarded as an investment, as good tools are essential, and last a long time if properly cared for. An equipment list is provided as a guide to the entering student. A good quality 35mm. camera is a very useful but not mandatory item on this list and most students find they use it to such an extent that they wish to purchase one during the first year or two of the program.

Field trips to study urban development projects in other cities are a part of the program. The School usually absorbs part of the cost of transportation but the student is expected to meet most other expenses while away.

Experience indicates that the student should budget about \$400 for materials, equipment and field trips per year, not including a camera.

Grading System

Except for the special instance listed below, grading is consistent with the general university regulations on p. 37.

Pass

To be used for Terminal Project and Minor Stream Thesis. This is a preliminary grade equivalent to C- or better which qualifies the student to present his work at the final review. This grade is for internal use only and will not be reported to the Registrar.

Course Load

During the first two years of the program in Architecture because of the limited number of student spaces, all students (with the exception of those students admitted with advanced standing or those who are repeating course work) will be required to undertake the full workload as set out in the course outlines on p. 185 of the Calendar or as modified by these regulations.

Academic Standing

Passing Grades

Design and Design Seminar Courses C-
Terminal Project and Minor Stream Thesis C-
Other Courses D-

Promotion

Students who achieve a passing grade in all courses in the program of study for their year and have a grade point average of 3.5 without Design and Design Seminar courses will be promoted to the next year of the program. In arriving at the grade point average only the grades of courses required to make up a full program in that year will be averaged.

Supplemental Examination Privileges

A student may not write a supplemental in a course graded *FNS* or *Abs*. If a supplemental examination is failed, the student must repeat the course before writing another examination in it.

Application to write supplemental examinations must be made at the appropriate Faculty Registrar's Office by the designated date. (See Examination Fees p. 45.)

Supplemental examinations must be written at the next supplemental examination period.

Students may apply to write supplemental examinations at educational institutions outside Ottawa.

Deficiencies and Probation

Students with a deficiency of one full course or two half courses may carry the deficiency into the next year of the program. A First or Second year student who has failed more than one full course or two half courses (after supplemental examinations) will be considered to have failed the year and if given permission to return, will return as a student on probation. Students on probation must repeat the failed courses and other courses in which their grade is less than C- and achieve a grade of C- or better in each.

With the approval of their advisers, students on probation may take additional courses for which they have the prerequisites.

Students who fail to clear their probationary status in two successive attempts will be required to withdraw from the program.

Summer Session Studio Program

A special Design Seminar course will be offered during the Summer session, for students in Architecture, subject to a minimum enrolment of ten students. To be admitted to this course a student must have successfully completed Second year Design and Design seminar courses.

Scholarships and Awards

The Faculty of the School will recommend students to the Senate for scholarships and awards available to the School. For this purpose an overall grade point average including the studio course will be calculated. Then the studio grade, the course grade point average or the overall grade point average will be used as is most appropriate for the nature of the award.

Students admitted with advanced standing whose grade point average may not represent a true measure of their worth will be given individual consideration.

Required Courses

* designates half-courses

Colloquium Division

A series of four required courses in successive years of the program in Architecture are offered to set out the Design context.

Architecture 76.102*

Colloquium 1

The context for the development and application of knowledge related to design.

Day division, Second term: Three hours a week.

Architecture 76.202*

Colloquium 2

Environment as context for designers.

Day division, Second term: Three hours a week.

Architecture 76.301*

Colloquium 3

The interdisciplinary context of design methodology.

Day division, Second term: Three hours a week.

Architecture 76.401*

Colloquium 4

Intuition, with an emphasis on creativity through integrative experiences.

Day division, First term: Three hours a week.

Division A

Architecture 76.120*

Theories of Architectural Design 1

An introductory course intended to provide the student with the basic knowledge of the nature of architecture, the historical and evolving role of the architect in the building process, the nature of the building process, the evolution of generic building forms and building typologies as they respond to climatic, resource, behavioural and cultural factors, and the vocabulary to proceed with the study of the history and theory of architecture.

Day division, First or Second term: Lectures three hours a week.

Architecture 76.203*

Theories of Architectural Design 2

An introductory survey extending to both vernacular and monumental construction in a wide range of cultural traditions from prehistoric to medieval times considered in terms of social investment, functions, cultural contexts, formal symbolism, material resources, environmental conditions, and structural systems.

Day division, First or Second term: Lectures three hours a week.

S. Loten

Architecture 76.308*

Theories of Architectural Design 3

Chronological continuation of Architecture 76.203* from medieval to modern era with special emphasis on traditions other than the western European, and on the emergence of new architectural modes in the twentieth century.

Day division, First or Second term: Lectures three hours a week.

S. Loten

Architecture 76.408*

Theories of Architectural Design 4

The development of architectural thought with an emphasis on the contemporary period. Various theoretical approaches such as organicism, structuralism, formalism, functionalism and expressionism will be placed within their historical, social and intellectual contexts. The buildings of key architectural figures will be examined and analyzed as illustrations of the development of these theoretical approaches. Substantive and methodological issues raised by these theories will be discussed.

Day division, First or Second term: Lectures three hours a week.

Architecture 76.451*

Contemporary Issues in Architecture

An explanation of the nature, attitudes towards, and impacts and resolution of some of the major issues today confronting architecture theory and practice. The meaning and significance of issues such as energy shortage, professionalism, loss of human scale, the objective-subjective controversy in design, the criticalness of sophisticated technology, and participation in design will be critically developed, analyzed, synthesized and extended.

Day division, First or Second term: Three hours a week.

Division B

Architecture 77.101*

Environmental Controls 1

Design for environmental control; perception of thermal, visual and acoustic conditions, comfort parameters; enclosure performance.

Day division, First or Second term: Lectures three hours a week.

D. Moizer

Architecture 77.111*

Structures 1

Introduction to structures as essential support and as a form determinant in architecture. Knowledge and skills in statics and strength of structures with a view to recognizing their usefulness in synthesizing alternate structural schemes. Introduction to basic concepts in structural analysis. Application of statics to the analysis of such structural elements as beams, columns, trusses, cables, frames and arches within the context of total building structures.

Day division, First or Second term: Lectures three hours a week, problems two hours.

Architecture 77.130*

Building Construction 1

A study of design and construction processes. An introduction to drawings and specifications followed by a detailed study of construction techniques used by the principal building trades to translate the design into a building. Emphasis will be placed on the proper selection of sub-systems and on the factors which affect the quality of construction.

Day division, First or Second term: Lectures three hours a week.

R. Brand

Architecture 77.200*

Environmental Controls 2

Continuation of Architecture 77.101* with additional coverage of building servicing and the interaction of environmental conditions with space enclosures. Aspects of the course are extensively reinforced by applications in design projects.

Day division, First or Second term: Lectures three hours a week, problems three hours.

I. Clapperton

Architecture 77.210*

Structures 2

Development of essential knowledge base and basic skills in structural design in the context of architectural problem-solving. Introduction to behaviour of structural members and simple structural systems. Introduction to structural planning through classification and discussion of common structural systems. Integration of structures with non-structural systems in the building.

Day division, First or Second term: Lectures three hours a week, problems two hours.

Architecture 77.230*

Building Construction 2

A study of building enclosures for the Canadian climate. A review of the principles of heat transfer, psychrometry and air movement. The techniques used to control the movement of heat, water and air through the enclosure. The application of these techniques to roofs and windows, and to wood, concrete, masonry and metal walls.

Day division, First or Second term: Lectures three hours a week.

R. Brand

Division C

Architecture 78.201*

The City in Context

An introduction to cities and the global context within which they are situated. Topics include: the global ecosystem; international patterns of urbanization; cities in history; urban forms; components; organization; and functional systems; experiencing the city; and problems and issues of urbanization. The course will emphasize understanding the city from a number of perspectives relevant for designers and students of cities generally.

Day division, Second term: Lectures three hours a week.

C. Aasen, J. Mather

Architecture 78.320***Introduction to Professional Practice**

An overview of the practice of architecture. Topics include professional organization and conduct, the architect's services, business law, office organization and management contract documents, building codes, contract management, cost control, accounting, site supervision. Presentation through lectures, guest speakers and case studies from professional practices and instruction representatives in the area.

Day division, First or Second term: Three hours a week.

Strutt

Division D**Architecture 79.101*****Mathematics in Architecture 1**

Basic mathematical skills for architecture students. Selected topics from arithmetic, algebra, geometry, trigonometry, calculus and numerical methods. Presentation through numerous applications of these mathematical areas to problems of architecture and related fields.

Day division, Second term: Lectures three hours a week.

Fischler

Architecture 79.111***Introduction to Algorithmic Problem Solving**

An introduction to the solution of problems by algorithms. The morphology of the algorithmic approach to problem solution. The use of the flow chart as a verification of the logic processes of an algorithmic solution. The use of the computer as a major tool in implementing algorithmic solutions. Essential skills in computer programming using the BASIC programming language.

Day division, Second term: Lectures two hours a week, problems two hours.

J.-M. Comeau

Architecture 79.201***Mathematics in Architecture 2**

An introduction to mathematical reasoning, with particular applications to architecture. Topics include: isometries of the Euclidean plane and three-space; symmetry groups applied to designs, frieze patterns, wallpaper patterns and uniform polyhedra; graph theory used to solve planning problems; perspective and orthogonal projections.

Day division, Second term: Lectures three hours a week, problems one hour.

Garner

Architecture 79.300***Problem Solving Methods and Models 1**

An introduction to the solution of problems by mathematical models. The morphology of mathematical model building is the major emphasis of this course. The difference between deterministic and probabilistic models. An introduction to the basics of the theory of probability. An introduction to the basics of the theory of

statistics. An introduction to the basics of graph theory. Supplementary topics discussed as examples: queues, network analysis.

Day division, First term: Lectures three hours a week.

J.-M. Comeau

Design Division**Architecture 80.101****Design 1**

A sequential series of project-related lectures given by the design staff intended to bring together the skills and technology subjects within the context of design projects. The lectures will deal on the one hand with material not normally covered in other courses, such as communication (particularly graphic) skills, anthropometrics, ergonomics, simple building and site planning, building typologies and building expression. On the other hand the series will reinforce subject areas such as building construction, environmental controls, structures and theory by discussing particular aspects of these relative to design projects. The lectures will also be used to introduce and clarify design projects.

Day division: Lectures three hours a week.

Architecture 80.102**Design Seminar 1**

During the First term design problems will deal with design at an introductory level and range in scale from personal space to the structure of communities. Second term design problems will deal with design at an introductory level with an emphasis on human and environmental factors in an architectural context. Seminars will be used for input of project-related topics, including an introduction to basic skills, construction and environmental factors, and also for evaluation of student work. Projects will also be co-ordinated with lectures in Architecture 80.101.

Day division: Two three-hour seminars a week.

Architecture 80.201**Design 2**

Continuation of Architecture 80.101, Design 1, which is prerequisite.

Day division: Lectures three hours a week.

Architecture 80.202**Design Seminar 2**

During the First term design problems will be assigned which will emphasize construction, structural and environmental factors in an architectural context. Second term design problems will deal with the integration of the subject areas covered in the First term and in the First year. Seminars will be used for inputs on basic skills, construction and building codes, as well as evaluation of student work. Projects will also be co-ordinated with lectures in Architecture 80.201.

Prerequisite: Architecture 80.102.

Day division: Two three-hour seminars a week.

Architecture 80.303*

Design 3A

A sequential series of project-related lectures given by the design staff similar in context to Design 1 and 2. This series will bridge, and where necessary fill the gap between knowledge gained in elective areas and design projects. Essentially the series will be a continuation of Design 1 and 2 at a more advanced level and will deal with space, support and enclosure. The lectures will also be used to introduce and clarify design projects. Prerequisite: Architecture 80.201.

Day division: Lectures three hours a week.

Architecture 80.304*

Design Seminar 3A

A series of design problems will be selected which are appropriate in scale, complexity, socio-behavioural characteristics, typology, and technical implications from the wide range of environments required by contemporary society. The seminars will be used for project-related input of a wide range of relevant data, and for the evaluation of student's work. Projects will also be co-ordinated with lectures in Architecture 80.303*.

Prerequisite: Architecture 80.202.

Day division: Two three-hour seminars a week.

Architecture 80.305*

Design 3B

Continuation of Architecture 80.303*, Design 3A, which is prerequisite.

Day division: Lectures three hours a week.

Architecture 80.306*

Design Seminar 3B

Continuation of Architecture 80.304*, Design Seminar 3A, which is prerequisite.

Day division: Two three-hour seminars a week.

Architecture 80.402*

Design 4A

Continuation of Architecture 80.303*, Design 3A, which is prerequisite.

Day division: Lectures three hours a week.

Architecture 80.403*

Design Seminar 4A

Continuation of Architecture 80.306*, Design Seminar 3B, which is prerequisite.

Day division: Two three-hour seminars a week.

Architecture 80.404*

Design 4B

Continuation of Architecture 80.402*, Design 4A, which is prerequisite.

Day division: Lectures three hours a week.

Architecture 80.405*

Design Seminar 4B

Continuation of Architecture 80.403*, Design Seminar 4A, which is prerequisite.

Day division: Two three-hour seminars a week.

Architecture 80.452*

Design 5

Continuation of Architecture 80.404*, Design 4B, which is prerequisite.

Day division, First term: Lectures three hours a week.

Architecture 80.453*

Design Seminar 5

Continuation of Architecture 80.405*, Design Seminar 4B, which is prerequisite.

Day division, First term: Two three-hour seminars week.

Elective Courses

(Half courses are indicated by the symbol *.)

Division A

Architecture 76.204*

Theories of Urban Design I

History of the city as a physical artifact. Study of the physical growth of cities as an expression of developing social and cultural values and structures, as well as with reference to aesthetic ideals. See also related workshop, Architecture 78.345.

Day division, First term: Lectures three hours a week.

Architecture 76.205*

Theories of Landscape Design I

An historical consideration of man's relationship to nature as this can be determined through his designs on the land in gardens and in the urban context. Beginning in ancient times and looking at the ordering of outdoor space until the end of the seventeenth century, the course will deal with the cultural context and physical factors that have given rise to varying approaches to the land.

Day division, First term: Lectures three hours a week.

J. Mather

Architecture 76.206*

Introduction to Industrial Design

Listed as Industrial Design 85.200*.

Architecture 76.207*

Theories of Visual Design I

An introduction to the field of visual design including an historical overview of the development of design theories, principles, and methods. See also related workshop, Architecture 79.340*.

Day division, First term: Lectures three hours a week.

H. Sharon, P. Sharp

Architecture 76.209*

Theories of Urban Design II

Consideration of the forces, in different periods determining the character and principal function of cities: military, religious, commercial, political, industrial post-industrial and utopian. Readings in the fields of literature, art, futures and history.

Prerequisite: Architecture 76.204*, or permission of the instructor.

Day division, Second term: Lectures three hours a week.

Architecture 76.210*

Theories of Landscape Design II

This course continues the study begun in Architecture 76.205* focussing on the period from the eighteenth century to the present and dealing with the origins of contemporary approaches to the land.

Prerequisite: Architecture 76.205*, or permission of the instructor.

Day division, Second term: Lectures three hours a week.

J. Mather

Architecture 76.211*

Industrial Design Analysis

Listed as Industrial Design 85.201*.

Architecture 76.212*

Theories of Visual Design II

An analytical study of design principles, including arrangement, composition, form, order, rhythm, colour and texture. There will be a concentration on two rather than three dimensional design.

Prerequisite: Architecture 76.207*, or permission of the instructor.

Day division, Second term: Lectures three hours a week.

H. Sharon, P. Sharp

Architecture 76.302*

History of Canadian Environment

Evolution of the Canadian landscape from Confederation to the present with emphasis on the influence of recreation, conservation, transportation, the agricultural landscape and new forms of collective settlements. This course in the latter half will operate as a seminar, with students delivering papers on aspects of Canadian culture that affect the landscape.

Day division, Second term: Lectures three hours a week.

J. Mather

Architecture 76.305

Workshop: Archeology of Modern Architecture

Buildings designed by leading twentieth century architects are studied with a particular emphasis on physical form, organization, space and detailing, through graphic studies and models. Attributes of form are related to design issues and philosophies as presented in contemporary writings.

Day division, First or Second term: Six hours a week.

S. Loten

Architecture 76.324*

Social Environment Systems

An examination of relationships between man and the environments he has built. The course will consider this "built environment" as the product of social processes

and as an influence on these processes at varying levels of organization. Lectures by the Faculty of Architecture and Sociology and other departments will be supplemented by guest lectures and readings.

Day division, First term: Lectures three hours a week.

G.D. Milne

Architecture 76.325*

Workshop: Man-Environment Interface I

Seminars, individual and interdisciplinary team projects developing and contributing knowledge and expertise in the area of relationships between man and the environment he has created.

Day division, First and/or Second term: Six hours a week. Offered concurrently with Architecture 76.425* and 76.426*.

(Architecture 76.324* and 76.325* are listed in the Department of Sociology as the two-term course Sociology 53.335.)

Architecture 76.326*

Human Factors in Environmental Design

Relation of human physiology and psychology to various modes of influence, with an emphasis on the built environment, applications to environmental design of methods and findings from physiology and psychology.

Day division, Second term: Lectures three hours a week.

Architecture 76.423*

The Human Development/Built Environment Interface I

Views of man as a developing being interacting with his physical and institutional environment: critical facilities, encounters and change-strategies in this process of interaction; the content of human development; the concept of developmental sequences, stages, and life cycles; total environments and world views. Emphasis on changing individuals, physical and institutional environments.

Prerequisite: Architecture 76.324*, or permission of the instructor.

Day division, First term: Lectures three hours a week. Seminar three hours a week.

C.T. Aasen (Architecture), C.C. Gordon (Sociology)

Architecture 76.424*

The Human Development/Built Environment Interface II

Applies the developmental insights acquired through Architecture 76.423* to particular problem areas such as: education and learning environments; leisure and leisure environments; housing and the family. Explores how, why, when and where the built environments facilitate or retard developmental processes.

Prerequisite: Architecture 76.423*, or permission of the instructor.

Day division, Second term: Lectures three hours a week.

C.T. Aasen (Architecture), C.C. Gordon (Sociology)

Architecture 76.425*

Workshop: Man-Environment Interface II

Examination of developing human beings and the built environment, identification of problem areas, and generation of new physical and human patterns which adjust to changing environmental conditions while enhancing human development.

Prerequisite: Architecture 76.424*, or permission of the instructor.

Day division, First and/or Second terms: Six hours a week. Offered concurrently with Architecture 76.325* and 76.426*.

Architecture 76.426*

Workshop: Man-Environment Interface III

Using knowledge, criteria and research methods from the human sciences, students in this workshop study and make proposals for changing environmental designs or for creating new designs. The emphasis is on complex environments, with in-depth explorations of part or all of the design process, tending towards synthesis. Prerequisite: Architecture 76.425*, or permission of the instructor.

Day division, First or Second term: Six hours a week. Offered concurrently with Architecture 76.325* and 76.425*.

Architecture 76.488

Independent Study

See p. 187.

Architecture 76.489

Minor Stream Thesis

See (iii), p. 187.

Division B

Architecture 77.300*

Lighting in Architecture

Specifications for lighting based on visual performance and subjective preference. Appropriate design techniques for daylight and electric light assessed by model and full scale installations. Topics may include: derivation of units, scalar and vector illumination, subjective appraisal and preferred lighting configurations, I.E.S. recommendations, working plane and luminance design, display lighting, exterior lighting.

Day division, First term: Lecture two hours a week, laboratory two hours.

D. Moizer

Architecture 77.302*

Acoustics in Architecture

Recapitulation of fundamentals. Sound in enclosures including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation.

Day division, Second term: Lectures two hours a week, laboratory one hour.

Architecture 77.303*

Energy and Form

The purpose of the course is to provide the student with a body of knowledge concerning energy as a criterion in decision-making for architectural design. Specifically, the course will cover conventional energy resources and the state-of-the-art of alternative energy/resource systems with respect to building shape, size, materials, openings, orientation, siting and use.

Day division, First or Second term: Lectures three hours a week.

E. Kayari and others

Architecture 77.304*

Workshop: Energy and Form

Study of the relationship between environmental factors, energy and architectural form. Emphasis will be placed on explorations into ways in which buildings and building elements can be planned and designed so as to take advantage of natural cycles in order to minimize the need for supportive energy inputs.

Day division, First or Second term: Six hours a week.

E. Kayari and others

Architecture 77.314*

Structural Analysis

Offered in the Department of Civil Engineering as Engineering 82.420*.

Architecture 77.316*

Design of Structural Steel Components

Offered in the Department of Civil Engineering as Engineering 82.425*.

Architecture 77.318*

Design of Structures of Composite Materials

The design of structures using composite materials of two or more components whose combined properties can be varied by altering the proportions and arrangements of the components. The influence of the properties of matrix and reinforcement will be studied, and the consequences developed in terms of design in steel reinforced concrete and glass fibre reinforced plastic. Other composites such as whisker reinforced metals and others developed to resist wear and impact will be reviewed.

Day division, Second term: Lectures three hours a week, laboratory three hours every two weeks.

Offered alternate years to Architecture 77.316*.

Architecture 77.320*

Industrialized System Building: Principles, Classification and Selection

A study of the principles of this approach to design and manufacture of buildings. A brief survey of the historical factors forcing changes in the building industries of the world. This will be developed by a review of existing systems using the technique of multi-parameter classification and selection by profile matching.

Day division, First term: Lectures three hours a week.

Architecture 77.326*

Workshop: Space Enclosure Systems

The exploration of space enclosure systems for a wide range of environments.

Prerequisite: Architecture 79.320*, or permission of the instructor.

Day division, Second term: Six hours a week.

G. Haider, J. Strutt

Architecture 77.330*

Performance of Building Materials I

Study of materials available for building with emphasis on their structure, properties, application and sustained performance over the life of a building.

Day division, First term: Lectures, laboratories and field trips four hours a week.

D. Wren

Architecture 77.333*

Performance of Building Materials II

A look at how man develops building skills in the use of material and how, with the development of raw materials, technologies and industrial processes, new ways of thinking about materials and methods influence the design process. Investigation will be made into many relevant building types to look at how materials and building elements have been used. Field trips will be arranged.

Day division, Second term: Lectures, laboratory and field trips four hours a week.

R. Burton

Architecture 77.335*

Workshop: Materials Application

Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology will be emphasized.

Prerequisite: Architecture 77.330*, or permission of the instructor.

Day division, Second term: Six hours a week.

Architecture 77.350*

Design Economics

Principles of building economics. Determinants of building costs and their prediction. Discussions on uncertainty and investment economics. Systems and techniques of creative cost control for buildings during schematic design, design development, construction document preparation and construction. Prime emphasis on the economic evaluation and choice from among alternatives during all phases of design process.

Day division, Second term: Three hours a week.

W. Dawson

Architecture 77.420*

Structure and Form

The challenge of space enclosure and spanning and its relationship to architectural form in history. Basic modes of force transfer and corresponding elements of

structural form. Aggregation of form elements within the laws of geometry and physical stability. Discussion of physical-structural and form characteristics of a wide variety of structural types like cables, membranes, shells, arches, domes, trusses, slabs, folded plates, beams, frames, grids.

Day division, First term: Lectures three hours a week.

S.G. Haider

Architecture 77.424*

Structural Planning in Architecture

The nature of structural planning problems; general criteria in structural planning; functional, technical, economic and form considerations; loads, classification and estimation; building codes, fire resistance requirements; structural systems; various classifications; comparative study; integration of structural systems with other building systems; synthesis, preliminary analysis and evaluation of alternative structural schemes; case studies.

Day division, Second term: Lectures three hours a week.

J. Adjeleian, S.G. Haider

Architecture 77.425*

Workshop: Industrialized System Building

The design of building system components, control methods, or philosophies to meet prescribed ranges of conditions.

Prerequisite: Architecture 77.320*, or permission of the instructor.

Day division, First term: Six hours a week.

Architecture 77.426*

Workshop: Structural Planning

Creative synthesis of structural schemes within the total context of building design. Methods of analysis applied to particular problems. Form and function. Case studies. A significant structural design effort is required.

Day division, Second term: Six hours a week.

J. Adjeleian, G. Haider

Architecture 77.428*

Workshop: Structure and Form

Study of structural nature of non-conventional space enclosure systems like cable structures, membranes, shells, submerged structures, excavated structural forms, lunar structures.

Second term: Six hours a week.

S.G. Haider, J. Strutt

Architecture 77.432*

Manufacturing Processes and Materials

Offered in the Department of Mechanical and Aeronautical Engineering as Engineering 88.371*.

Architecture 77.440*

Design for Construction

A series of lectures and visits to building sites and subcontractors' plants to study the building process as it is affected by the architect's decisions. Contractors and subcontractors will participate. Analysis of decisions

taken and methods used. Elemental cost analysis. Estimating costs from sketches.

Prerequisite: Architecture 77.330*, or permission of instructor.

Day division, First term: Lectures, visits, seminars, three hours a week.

D. Wren

Architecture 77.488

Independent Study

See p. 187.

Architecture 77.489

Minor Stream Thesis

See (iii), p. 187.

Division C

Architecture 78.301*

Workshop: Land Use Analysis

An introduction for students of Architecture and other disciplines to the broad concepts of environmental design, based on the necessity of an ecological approach to land use planning. It includes the history of North American concern with the land as a resource; theories and methods of land use analysis that result from nature of recent concern; and selected illustrative case studies. Students will work in teams with the help of the instructor, other university faculty members and those engaged in government activity in this field, to analyse and plan for selected areas.

Day division, First term: Six hours a week.

J. Mather

Architecture 78.310*

Land Development

An overview of the land development and redevelopment process and an exploration of more effective ways of participation in it. An actor-oriented approach is taken. Different participants explain their role in the process and the nature and source of information required for decision making. Case studies are used to illustrate the market studies, development feasibility, impact of development controls, emerging citizen roles, cost/benefit analysis of development alternatives, urban gaming, development trends.

Day division, First term: Three hours a week.

W. Dawson

Architecture 78.319*

Workshop: Land Development

Introduction to the land development and redevelopment processes through application of knowledge acquired in previous studies and taken from the field. Focus on team projects supported by guest lecturers, field investigations and project discussions.

Prerequisite: Architecture 78.310*, or permission of the instructor.

Day division, First term: Six hours a week.

W. Dawson

Architecture 78.329*

Workshop: Professional Practice

An introduction to the application of various components of a professional architectural practice. Client requirements, contract and project management, personnel and office management, specifications, cost control, etc., are developed as parts of the building process.

Day division, Second term: Six hours a week.

Architecture 78.330*

Community Development

A study of leading issues and problems in Canada's urban communities: neighbourhood preservation and planning, heritage conservation, social animation, community organization, citizen power, advocacy planning, community development corporations, co-operative housing, social planning. Overviews and case studies, lectures and guest lecturers.

Day division, First term: Three hours a week.

Architecture 78.339*

Workshop: Community Development

Field investigations, team projects and seminars in community development issues and problems in Canada.

Prerequisite: Architecture 78.330*, or permission of the instructor.

Day division, Second term: Six hours a week.

Architecture 78.340*

City Organization and Planning Processes

An overview of the structure, form and functioning of Canadian and other countries' cities; methods for intervening in and directing city processes and solving city problems: an introduction to urban problems, potentials and solutions. Topics include: physical infrastructure and forms of cities; urban facilities and networks; ecosystems, demography and social organization, and government and politics; quality of life, goals, and perceptions of urbanites; urban management, development, regulation and codes, design, planning, and policy-making. Lectures, guest lecturers, reading assignments.

Day division, First term: Three hours a week.

C.T. Aasen, G.F. Sutton

Architecture 78.345*

Workshop: Urban Design

A workshop program investigating aspects of design problems that relate to the wider context of regional and urban planning. This will involve examination of techniques used for the formulation and implementation of design strategies that shape complex urban environments.

Day division, First or Second term: Six hours a week. Co-ordinated and offered jointly with Architecture 78.349*. See also Architecture 76.204* and 76.209*.

R.E. Osler

Architecture 78.349*

Workshop: City Organization and Planning Processes

Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Seminars, guest lecturers, field investigations and individual and team projects. Co-ordinated and offered jointly with Architecture 78.345*.

Prerequisite: Architecture 78.340*, or permission of the instructor.

Day division, First term: Six hours a week.

C.T. Aasen

Architecture 78.360*

Futures (Long Range) Planning

An overview of the approaches, methods and application of futures planning to the development of policy, program, management and design options in the urban field. The emphasis is on research, analysis, and synthesis from a long range, multidisciplinary perspective. Lectures, guest lecturers, readings and assignments.

Day division, Second term: Three hours a week.

C.T. Aasen

Architecture 78.370*

Workshop: Futures (Long Range) Planning

Applications of futures planning approaches and methods to specific urban situations and problems. Seminars, guest lecturers in support of individual and multidisciplinary team projects.

Prerequisite: Architecture 78.360*, or permission of the instructor.

Day division, Second term: Six hours a week.

C.T. Aasen

Architecture 78.488

Independent Study

See p. 187.

Architecture 78.489

Minor Stream Thesis

See (iii), p. 187.

Division D

Architecture 79.301*

Problem-Solving Models and Methods II

A continuation of Architecture 79.300*. The nature and classification of problems and corresponding arrays of mathematical models and heuristics. Topics include game theory, graph theory, networks, probabilistic models in forecasting, evaluation and decision-making. Case studies and student project.

Prerequisite: Architecture 79.300*, or permission of the instructor.

Day division, First term: Lectures three hours a week, laboratory two hours.

M. Hancock

Architecture 79.312*

Problems in Computing

Introduction to various types of non-numeric data, its representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. Student projects.

Prerequisite: Permission of the instructor.

Day division, Second term: Lectures two hours a week, Laboratory two hours.

Architecture 79.320*

The Geometry of Form

The development of a basic vocabulary of form through identification of the rules for combining and relating the minimal identifiable elements of geometric form. Investigation of the methodologies for changing those identities in order to generate entirely new forms. Study of planar and space geometries with special emphasis on polygons and polyhedra, their singular, close and loose packing properties. Discussions on form; geometric operations, like vertex motion, folding, reciprocation and truncation.

Text: Williams, *Natural Structure*.

Day division, First term: Lectures three hours a week.

J. Strutt

Architecture 79.325*

Workshop: Experimental Design

Introduction to experimental design emphasizing simulation; graphical, analog and mathematical modelling. Topics include computer simulation, physical and theoretical model testing, complete and incomplete design. Student projects.

Prerequisite: Architecture 79.301*, or permission of the instructor.

Architecture 79.326*

Workshop: Computer Applications

Applications of existing computer programs and programming techniques to various architectural problems. Software, state-of-the-art and applications will be extensively covered. Project work may be user-oriented on the basis of existing software or development of original work. Student projects.

Day division, Second term: Six hours a week.

Architecture 79.327*

Workshop: Computer-Aided Design

Adaptation of design techniques to computer application. Bifocal approach will offer the opportunity for application of existing software to interactive graphics systems and development of heuristic design models based on original work. Student projects.

Prerequisite: Permission of the instructor.

Day division, First term: Six hours a week.

Architecture 79.328*

Workshop: Computer Graphics

Use of interactive graphics hardware systems and study of file structures for graphics processing. Developmental work leading toward computer-generated art as well

as implementation of production-oriented user display software will be encouraged. Student projects.
 Prerequisite: Permission of the instructor.
 Day division, First and Second terms: Six hours a week.
 G. Andonian

Architecture 79.329*

Workshop: Problem Solving

Developmental work in applications of problem-solving techniques to design problems. Areas covered will include problem definition, design alternatives, evaluation criteria, emphasizing strategies, models and methods; term project.

Prerequisite: Architecture 79.300*.

Day division, Second term: Six hours a week.

M. Hancock

Architecture 79.330*

Workshop: Co-operative Problem-Solving

Group training and problem-solving sessions will focus on participation and roles within the meeting; listening; itemized response; uses of metaphor; force-fit; closure and follow-through techniques. Student project. Limited enrolment.

Day division, First and Second terms: Six hours a week.

D. Westwood

Architecture 79.331*

Workshop: Building Programming

A workshop concerned with the development and application of systematic techniques in the preparation of building programs. The topic will be treated as a problem in information management, with particular emphasis on information transformation and transfer in relation to problem boundary definition, directives formulation and graphic analysis.

Prerequisite: Architecture 79.301*.

Day division, First or Second term: Six hours a week.

M. Hancock

Architecture 79.340*

Workshop: Visual Design

A workshop program to increase the student's capacity to visualize and communicate in several graphic media, and also to increase sensitivity to form, structure, space, texture and colour.

Day division, Second term: Six hours a week.

H. Sharon or P. Sharp

Architecture 79.341*

Workshop: Photography

Experimentation with photography as a means of communication and study of the social and built aspects of the environment.

Prerequisite: Permission of the instructor.

Day division, First and Second terms: Six hours a week.

J. Flanders

Architecture 79.351*

Design Education

Review of extant design education methods and related learning theories. Development of various approaches to the education of designers: awareness, skills and knowledge; analytic, synthetic and evaluative capabilities.

Day division, First term: Lectures three hours a week, laboratory two hours.

M. Hancock

Architecture 79.488

Independent Study

See p. 187.

Architecture 79.489

Minor Stream Thesis

See (iii), p. 187.

Design Division

Architecture 80.454

Design Seminar: Selected Project

The project will be selected according to the needs of the class group to round out their design experience. A comprehensive solution will be required. This project will carry the weight of a full course. Seminars will be used for project-related input of relevant data and for evaluation of student projects.

Prerequisite: Architecture 80.453*.

Day division, Second term: Three three-hour seminars a week.

Architecture 80.491

Terminal Project

The project will be selected by the student in consultation with a tutor who will meet with him/her one hour per week to advise on the development and direction of the project solution. The project will carry the weight of two full courses. See note (ii) on page 187 for further details of evaluation procedures, etc.

Officers of the School

Director

W. Gilles

Professor

W. Gilles

Visiting Professor

Each year a foreign industrial design educator is invited to the School as a Visiting Professor.

Associate Professor

P.R. Sharp

Assistant Professors

G.A. Lynn

J.S. Ostiguy

Sessional Lecturers

L.J. Buck

G.F. Singer

General Information

Industrial Design* is a creative activity, the aim of which is to determine the formal qualities of objects produced by industry. These formal qualities include the external features but are principally those structural and functional relationships which convert a system to a coherent unit, both from the point of view of the producer and of the user.

Industrial Design tends to embrace all aspects of human environment which are conditioned by industrial production.

In the future, the traditional activity of design for growth may continue to be essential. It will be necessary, however, to develop a design activity which contributes to the regulating of growth processes, the conservation of resources and the protection of the environment.

* As defined by the International Council of Societies of Industrial Design.

Bachelor of Industrial Design Degree Program

In September 1973, Carleton University initiated the First year of a new four-year program leading to the Bachelor of Industrial Design degree.

The Bachelor of Industrial Design degree will be awarded on successful completion of the four-year program of studies. The program is structured to meet the requirements of the developing profession of Industrial Design. This implies an education with a solid general back-

ground, enabling the designer to communicate with experts in other disciplines. It also implies development of expertise in designing for one or more specific sectors of the wide field of application of Industrial Design. The program of studies, which was initiated as a joint venture of the Faculty of Engineering and the School of Architecture, therefore provides for an Engineering-oriented as well as an Architecture-oriented stream, together with all possibilities for the integration of both.

Admission Requirements

First Year

The Ontario Secondary School Honour Graduation Diploma with a minimum 60% average and including Functions, Calculus, Chemistry and Physics; or the successful completion of the Qualifying University year in Science or Engineering.

Entering high school students who are fully qualified academically are expected to arrange for a personal interview with a member of the School's faculty. Such an interview will give the School a clearer idea of the seriousness of the candidate and afford the candidate an opportunity to see and learn about the School's program actively. Applicants who make no effort to arrange an interview may find themselves at a serious disadvantage in the competition for this limited-enrolment program. On the other hand, students who present a portfolio in addition to their academic qualifications may find themselves in an exceptionally good competitive position.

Advanced Standing and Transfer of Credits

Applications for admission with advanced standing to the Second or subsequent years of the program leading to the Bachelor of Industrial Design degree will be evaluated on an individual basis. Advanced standing for academic subjects completed at another university or college will be evaluated for equivalence to the program requirements of the School of Industrial Design. Transfer of credit for projects in an Industrial Design, Engineering or Architecture program completed at another university or college, for those which have been completed at Carleton, may be considered, provided the grade is satisfactory and the student shows evidence of aptitude for design studio work by the production of a portfolio of original drawings or photographs, etc. and as a result of an interview with a designated member of the faculty of the School.

Mature Matriculation

Persons who lack the normal entrance requirements as published in this Calendar but who are twenty-three years of age or over, prior to the session in which they wish to enrol, may receive consideration for admission to a degree program.

Selective Admission

It should be noted that the number of student spaces in the School is limited. Because of this we expect that it may not be possible to grant admission to all applicants who meet the foregoing requirements. Admission will therefore be on a selective basis with preference given to those candidates who show the highest promise of success in the course.

Course Requirements

First and Second Years

See charts First and Second year Engineering, pp. 156 and 157. First and Second year Architecture, p. 185.

First and Second years for students enrolled in the School of Industrial Design are, for the most part, identical to either First and Second years of the Faculty of Engineering or of the School of Architecture, depending on the orientation-stream the student wishes to follow.

Students in Industrial Design must basically take the course load with other students in Engineering or in Architecture. Some courses in the First and Second years will be given by staff from the School of Industrial Design.

While following the program of Architecture or Engineering in First and Second years, students registered in the B.I.D. program must complete the following courses in order to follow the prescribed Third year program:

Economics

43.100 Principles of Economics, or 43.101 Contemporary Economic Issues.

Psychology

49.100 Introductory Psychology.

Industrial Design

85.200* Introduction to Industrial Design and 85.201* Industrial Design Analysis.

In order to be able to take these courses, students should use the available electives of their First and Second years for this purpose. In addition, the student, in consultation with his or her adviser, may replace the equivalent of one full course of the required core program in Second year Architecture or Engineering with one of the aforementioned courses.

Third Year

| Term | Lectures and Tutorial | | Laboratory and Studio Projects | | Course Weight |
|---|-----------------------|-------|--------------------------------|-------|---------------|
| | I | II | I | II | |
| Conversion Elective (note a) | 3 (A) | 3 (A) | 6 (E) | 6 (E) | 7 |
| 42.208 Introduction to Marketing (note b) | - | 3 | - | - | 3.5 |
| 85.360 Anthropometrics and Ergonomics | 2 | - | 3 | - | 4 |
| 85.361 Anthropometrics and Ergonomics Workshop | - | 2 | - | 3 | 4 |
| 49.321 Perception | 3 | - | - | - | 3.5 |
| 85.310 Mass-Production Technology for Industrial Design | 2 | 2 | 4 | 4 | 8 |
| 85.320 Form and Colour Fundamentals | 2 | 2 | 4 | 4 | 8 |
| 85.330 Industrial Design Project I | 2 | - | 10 | - | 8 |
| 85.331 Industrial Design Project II | - | 3 | - | 10 | 9 |
| Elective | 3 | 3 | - | - | 7 |
| <hr/> | | | | | |
| Hours per week | (A) | 17 | 18 | 21 | 21 |
| | (E) | 14 | 15 | 27 | 27 |
| | | | | | 62 |

Note a

Students who followed the First and Second years of the B.I.D. Program in the Architecture stream (A) should take electives in Engineering.

Students who followed the First and Second years of the B.I.D. Program in the Engineering stream (E) should take electives in Architecture.

Note b

Students in Industrial Design can gain entry into this course by permission of the instructor. Prerequisites are Accounting 41.100 and Economics 43.100 and either Psychology 49.100 or Sociology-Anthropology 56.100.

Fourth Year

| Term | Lectures and Tutorial | | Laboratory and Studio Projects | | Course Weight |
|---|-----------------------|----|--------------------------------|----|---------------|
| | I | II | I | II | |
| 85.400 Professional Practice in Industrial Design | - | 3 | - | - | 3.5 |
| 85.401 Industrial Design Seminar (note a) | 3 | - | - | - | 3.5 |
| 85.430 Major Industrial Design Project (note b) | 2 | 2 | 15 | 15 | 20 |
| 85.431 Minor Industrial Design Project I (note b) | - | - | 6 | 6 | 7 |
| 85.432 Minor Industrial Design Project II (note b) | - | - | 6 | 6 | 7 |
| 85.450 Colloquium Cultural Subjects | 3 | 3 | - | - | 7 |
| Elective (Industrial Design) (note c) | 3 | 3 | - | - | 7 |
| Elective (note c) | 3 | 3 | - | - | 7 |
| Hours per week | 14 | 14 | 27 | 27 | 62 |

Note a

The Industrial Design Seminar will be concentrated in one week, during the First term or between the First and Second terms; no other courses can be taken during that week.

Note b

Lecture and tutorial hours for the Major Industrial Design Project will not be scheduled in the University timetable. They will be used in the briefing, instruction and information period of the Projects and be scheduled in accordance with the workplan, which each student is required to submit to the Industrial Design Projects Committee of the School, before the end of the Second term of Third year.

Note c

Electives must be chosen in consultation with the Industrial Design Projects Committee on the following principles:

(i) the electives chosen should serve to deepen the student's understanding of fields related to Industrial Design or disciplines which are relevant for industrial designers;

(ii) the electives chosen should preferably be advanced courses, for which the student has taken prerequisites in previous years;

(iii) the electives chosen should preferably be related to the Industrial Design Projects and provide basic and/or actual information for these Projects.

Third and Fourth Years

See charts Third and Fourth year Industrial Design pp. 201-202.

Industrial Practice Internship

In order to provide the student with a realistic view on the possibilities and limitations of Industry and to establish and maintain good contacts and communication among the School, the students and industry, the student in Industrial Design has to spend a period of time as an intern in industry.

These periods of Industrial Practice Internship are to be taken prior to graduation and to be chosen in an industry that will satisfy the faculty involved.

Students should find a suitable internship on their own initiative, although the School of Industrial Design offers placement assistance for this purpose. In cases where a suitable industrial internship is not possible, alternate arrangements will be considered.

If the Industrial Practice Internship is not completed in time or if it is not proved successful, the student will not be awarded the Bachelor of Industrial Design degree until the missing internship is completed and proof of satisfactory results is given.

During the Industrial Practice Internship, a study of the relationship between Industrial Design and the technology, production process, or functional issues at hand will be undertaken. A report is to be submitted to the School, to be filed in the technical data facilities of the School and made accessible to other students.

See course 85.340

Industrial Design Projects

The Industrial Design Projects in the Third and Fourth years will represent either real or simulated situations to be developed to the stage of drawings, models, full-scale mock-ups or simulated finished products, as appropriate.

The design experience in Industrial Design Projects synthesizes and integrates all the other course work and draws on the resources from those courses, including the disciplinary expertise of the staff. It should also attempt to explore and exploit knowledge available on campus and within institutions outside.

Industrial Design Projects, even when they are research-oriented, will only be acknowledged when they are aiming at predetermined goals, which should be of a concrete nature, preferably objects to be made by Industry. The subject or theme of the Project will be determined by agreement between the student and the Faculty involved.

The usual pattern of activities in the execution of an Industrial Design Project is, in its simplest form, composed of three subsequent phases:

- (a) an analytical informative phase;
- (b) a creative or formative phase;
- (c) a descriptive or communicative phase.

Progress within this pattern of activities is made by feedback and feed-forward with intermediate evaluations. A project will not be considered complete, if any of the three major phases has not been passed through, documented and evaluated.

The student will be required to keep a specified record of working hours spent on the Project, which record will have to be available for inspection. The record will be one of the documents to be submitted at examination.

The School of Industrial Design may conditionally approve an intended collaboration of students in the execution of Industrial Design Projects, provided that proper means of evaluation and examination are built in the project, to ensure the identification of each student's contribution.

Industrial Design Projects, will be examined by the appropriate body after each of the phases and on the planned and agreed deadlines. Students who do not meet the deadlines of submission of project work will be considered to have withdrawn from examination.

The execution of Industrial Design Projects will require professional equipment for sketching, drawing, etc., which will not be provided by the School. A list of recommended equipment is available at the School's administration. The initial costs for the minimum equipment necessary will be approximately \$500, which includes the cost of photographic equipment.

The execution of Industrial Design Projects will require materials for sketching, drawing, reproduction, model making, etc. Moreover, travel costs may be involved. The level of total expenditure will vary considerably with the nature of the theme or subject of the Project. The policy of the School is to see that such costs are only partly borne by the student and that co-operation with industry and institutions outside the University will provide further funds. The student's contribution can be estimated generally in the order of \$250 per year.

Documents, sketches, drawings, models, etc. resulting from Industrial Design Projects must be registered with the administration of the School as the authorized work of the student while studying at the School of Industrial Design of Carleton University.

Resulting documents, sketches, drawings, models, etc. from Industrial Design Projects must be retained by the student for a minimum period of two years after production, in which period the student must have these results available in good condition for the School of Industrial Design for exhibition, display or publication purposes. During this time, the student will be required to advise the Director of the School, well in advance, about any transaction, exhibitions, display or publication, which will involve these results.

Students are not allowed to use the result of Industrial Design Projects for commercial purposes without written permission of the Director of the School of Industrial Design.

Fourth Year Industrial Design Projects

All regulations and arrangements as described under "Industrial Design Projects" apply to the Fourth year Projects, except for Industrial Design 85.435 and 85.436. Over and above these regulations, these Industrial Design Projects are subject to the following:

Fourth year Industrial Design Projects will be conducted, supervised, administered and examined by the Industrial Design Projects Committee, reporting to the Faculty Council of the School.

The subjects or themes of Industrial Design Projects will be determined by agreement between the student and the Industrial Design Projects Committee, which agreement should be reached before the end of Second term in the Third year.

Students registering in Fourth year, who have failed to reach an agreement with the Industrial Design Projects Committee before the end of the Third year, will be given assignments for Fourth year Projects by the Committee after registration. Such assignments are binding.

In order to reflect the actual situation of the professional industrial designer, the student will be required to undertake more than one project to be executed simultaneously in Fourth year. The student will be required to plan the work on the Fourth year Industrial Design Projects well in advance, in consultation with the Industrial Design Projects Committee.

The proposal for a work plan has to be submitted to the Industrial Design Projects Committee for approval before the end of the Second term of Third year.

The specified record of working hours spent on Fourth year Industrial Design Projects will have to be available for inspection by the Committee at any time and will be amongst the documents to be submitted at the final examination.

General Information

Course Pattern and Counselling

The program of study in Industrial Design is necessarily structured to meet the requirements in education and training for a professional career in industrial design. The First and Second years' course patterns follow those of the School of Architecture and the Faculty of Engineering, with adaptations through the elective courses offered. The Third and Fourth years of the School of Industrial Design are structured to build on the material of the previous two years with minor conversions to suit a program with an identity of its own. The emphasis in Fourth year is on the Industrial Design

Projects, the other courses preferably to be considered as supporting sources of knowledge and understanding.

When a student first registers in the School of Industrial Design, he is assigned a faculty member of the School, who will act as his adviser. The adviser usually counsels the student for the duration of his undergraduate program. This counselling includes program requirements, selection of electives and course and program approvals.

Progress through the program in First and Second year is by means of the systems of the School of Architecture and the Faculty of Engineering as appropriate. (pp. 156, 157 and 185.) Progress through the program in Third and Fourth years is by means of the modified credit system as used in the Faculty of Engineering.

For purposes of scheduling, each student is considered as being in a particular year of the program. In order to move from Third to Fourth year of the program, a student must not be deficient in the Industrial Design Project courses and in no more than one of the other courses. This requirement does not relate to a student's academic status, but only to his nominal year designation. However, a student who is taking courses in Fourth year while designated in Third year, has the responsibility for satisfactorily resolving any prerequisite deficiencies and difficulties in his course program.

Course Level

The year level of a course can be read from the course number; for example the course Industrial Design 85.331 is at Third year level and 85.450 is at Fourth year level. This indicates the general academic background required and specific prerequisites are also given where appropriate. Students may take courses at a year level higher than their current registration; however they are advised to consult the course instructor if they have doubts regarding their background preparation. In some cases, the instructor may also be able to waive specific prerequisites.

Electives

The School of Industrial Design offers only a few elective courses under its own jurisdiction. It is strongly recommended, however, that students in Industrial Design choose from the wide variety of courses in humanities, social sciences, engineering or multidisciplinary courses offered in the University. Industrial Design Projects most often represent complex situations which require background information that often will be better understood when supported by appropriate elective courses in other disciplines. Certain advanced courses in Psychology and Economics can hardly be eliminated from a program in Industrial Design which aims at a sound professional body of knowledge.

Qualifying University Year Courses

Qualifying University year courses cannot be used to satisfy any of the elective requirements in any year of the regular course pattern.

Timetables

All undergraduate courses of the School of Industrial Design are normally offered in the Day division only and are scheduled in the timetable of the University.

Grading System

Standing in courses will be determined by the Faculty and will be shown by alphabetical grades. The grades used with their corresponding grade points are as follows:

| | |
|--------|-------|
| A+ 12 | B+ 9 |
| A 11 | B 8 |
| A - 10 | B - 7 |
| C+ 6 | D+ 3 |
| C 5 | D 2 |
| C - 4 | D - 1 |

Passed Supplemental Examination: 2

Standing to represent special circumstances are as follows:

Aeg

Aegrotat standing is a pass standing granted despite absence from the final examinations. It may be granted by the Committee on Admissions and Studies of the School of Industrial Design only in response to a student's written request. Aegrotat standing will be granted only in exceptional circumstances and if the term work has been of high quality.

Pass

Pass standing in a supplemental examination: equivalent to 2 grade points.

F

Failure: no academic credit.

FNS

Failure, but with supplemental privileges withdrawn because of unsatisfactory term work or an unacceptably low mark in the examination. No academic credit.

Wdn

Withdrawn in good standing: no academic credit.

Abs

Absent from formally scheduled final examinations where the necessary term work has been completed. No supplemental privileges. No academic credit.

Def

Students who are absent from final examinations or who are unable to complete their course work for medical or compassionate reasons may apply to the Committee on Admissions and Studies of the School of Industrial Design for deferred examination privileges. Such applications must:

1. be made in writing to the Engineering Faculty Registrar's Office not later than one week after the date of the examination; and
2. be fully supported in the case of illness by a medical certificate or by appropriate documents in other cases.

Academic Standing, Promotion and Probation

The academic standing of each full-time student will be reviewed just prior to fall registration. At that time, the student's previous record, including courses from the preceding summer session and supplemental examination results, will be considered.

Academic Standing, Promotion and Probation in First and Second Years

During the First and Second years, academic standing, promotion and probation of a student registered in the B.I.D. program, is under the jurisdiction of the School of Architecture or of the Faculty of Engineering, whichever is applicable (see p. 167 for Engineering and p. 188 for Architecture).

Promotion to the Third year of the B.I.D. program requires the same academic standing as required for promotion to Third year Architecture or Third year Engineering, for students who were enrolled in the Architecture or Engineering stream respectively.

Academic Standing in Third and Fourth Years

Academic standing in Third year is based on the student's record in this year exclusively and academic standing in Fourth year is based on both the records of Third and Fourth years. To achieve satisfactory academic standing, the student must attain standing (a grade point of 1 or better) in at least four full courses, or equivalent, of those in which the student has been registered during the past year. Moreover, the student must have achieved a grade point of 4.0 or better in each of the Industrial Design Project courses, together with a weighted grade point average over all courses taken after Second year, excluding those which have been repeated, of 3.5 or better.

Probation

A student who fails to meet the foregoing conditions for satisfactory academic standing will be placed on academic probation and is required to repeat the Industrial Design Project courses in which grade points less than 4.0 were obtained. A student on probation, who meets the foregoing conditions will regain satisfactory academic standing.

A student on probation, who fails to meet the conditions will lose the undergraduate status and will be ineligible for future registration in the B.I.D. program.

Students with Advanced Standing

Students admitted with advanced standing must obtain an average appropriate to their level of admission but only those courses taken at Carleton University will be included in the evaluation.

Graduation

In order to fulfill the minimum graduation requirements for the degree of Bachelor of Industrial Design, a candidate must have passed all the course requirements of the First to Fourth years, inclusive, with an over-all weighted grade point average of at least 3.5. In addition, the candidate must have achieved a grade point of 4.0 or better in each of the Industrial Design Project courses and be recommended by the School of Industrial Design.

Degrees with Distinction

Upon recommendation of the School of Industrial Design, the notation "with High Distinction" may be made on the academic records of a candidate for the degree of Bachelor of Industrial Design. To receive this recommendation, the candidate is expected to obtain a weighted grade point average of at least 9.0 in the course requirements of the final year and, in addition, a weighted grade point average of at least 7.8 in the course requirements of the First to Fourth years, inclusive.

Upon recommendation of the School of Industrial Design, the notation "with Distinction" may be made on the academic records of a candidate for the degree of Bachelor of Industrial Design. To receive this recommendation the candidate is expected to obtain a weighted grade point average of at least 7.8 in the course requirements of the final year and in addition, a weighted grade point average of at least 6.6 in the course requirements of the First to Fourth years, inclusive.

Courses Offered

Industrial Design 85.200*

Introduction to Industrial Design

An overview of the theoretical background of the phenomenon Industrial Design, consisting of such topics as: the definitions and dimensions of design and industrial design, its nature and its historical evolution; the notion of quality; quality aspects in man-made objects; formal qualities as determinants for categories of design; design methods; design management in industry; professional practice of industrial design and industrial design promotion, nationally and internationally. Practising industrial designers will be invited to

present case studies of their activities. (Also offered as Architecture 76.206*.)

Day division, First term: lectures and discussions three hours a week.

Industrial Design 85.201*

Industrial Design Analysis

The various problems involved in industrial design will be analysed. Among others: The relationship with principle techniques and mass-production technology; problems of uniformity and variety, specialty and versatility in production; problems of tolerances; the role of ergonomics and anthropometrics in design; industrial design and environment; speculations about future industrial design approaches with regard to pollution and conservation of resources; adaptation of value-analyses to the field of industrial design. (Also offered as Architecture 76.211*.)

Prerequisite: Industrial Design 85.200*. (Architecture 76.206*.)

Day division, Second term: Lectures and discussions three hours a week.

Industrial Design 85.230*

Visual Communication Theory and Techniques for Industrial Design

An introduction to the theory and basic techniques of mechanical drawing and sketching as an aid to design synthesis and communication, including orthographic projection, auxiliary, oblique and isometric views. Introductory material will also be presented in basic sketching, ideation and visualization, together with presentation techniques.

Evening division, First or Second term: Tutorials and laboratory six hours a week.

Also offered Summer 1977.

Industrial Design 85.310

Mass-Production Technology

This course attempts to generalize the transformation techniques for all operational materials in modern industry. The course presents a survey of the various techniques applied to material in its liquified, plastified or solid state of aggregation, such as casting, injection molding, extruding, forging, vacuum forming, deepdrawing, stamping, folding, cutting, machining, sintering, joining, laminating and finishing operations. The techniques will be merited in terms of economics and accuracy. The role of templates and molds will be emphasized and properties and limitations of molds will be studied.

Prerequisite: Third year registration.

Day division: Lectures and tutorials two hours a week, laboratory four hours a week.

Industrial Design 85.312*

Graphics Technology and Design

Survey of techniques and processes used in the printing and blockmaking industry and the relationship of these processes to graphic design. Typeface design and the development of type and families of typeface from historical sources. Typeface as exponents of

cultural trends. Basics underlying typography and layout in graphic design. Minor graphic design projects will be executed in connection with the lectures.

Prerequisite: Third year registration.

Day division, First term: Lectures and tutorials three hours a week, laboratory three hours a week.

Industrial Design 85.313*

Package Engineering and Design

Survey of processes and materials used in the packaging industry. Principles of package engineering and design for the transportation and distribution of mass-produced products. Packaging design as integrated in marketing processes; product and brand identification; corporate identity through package design. Minor packaging design projects will be executed in connection with the lectures.

Prerequisite: Third year registration and Industrial Design 85.312*.

Day division, Second term: Lectures and tutorials three hours a week, laboratory three hours a week.

Industrial Design 85.320

Form and Colour Fundamentals

The objective of the course is to encourage the student to approach the phenomena of form and colour systematically. Known systems of form determination and colour identification will be evaluated. Properties of structural elements of form and their interactions in ranges, proportions, static and dynamic symmetries in two and three dimensional compositions will be studied. Form and colour in nature will be compared with form and colour in man-made environments. Further topics of the course will be the appearance of form and colour under various conditions and in various positions, the expression of form and colour, typology of objects, form organization and form description and colour specification.

Prerequisite: Third year registration.

Day division: Lectures and tutorials two hours a week, laboratory four hours a week.

Industrial Design 85.321*

Environmental Communication Workshop

It is recognized that the objects of our environment, besides serving their primary usage, are most often used as a medium to communicate man's personal or collective ideas. The design of objects and environments can, to a great extent, be seen in this context and this course is intended to explain the major mechanics of communication in general and of communication by means of objects in particular. Analyses of objects and environments with respect to communicative functions will be undertaken and experiments will be conducted.

Prerequisite: Third year registration.

Day division, First or Second term: Tutorials and laboratory six hours a week.

Industrial Design 85.330*

Studio Projects Industrial Design I

The first industrial design projects to be accomplished are of a simple nature, based on a given briefing and program of requirements. The emphasis is on the creative and executive phases of the design process.

Prerequisite: Engineering 88.100 or Industrial Design 85.230* or permission of the instructor.

Day division, First term: Lectures and tutorials two hours a week, laboratory ten hours a week.

Industrial Design 85.331*

Studio Projects Industrial Design II

Industrial design projects II are of a more complex nature and may be accomplished with experts from other disciplines. These projects will begin with an extensive period of orientation on the given problem areas from which the program of requirements is derived, which will present the criteria for further creative and executive work. The choice of design assignments will be made with the consent of the students involved. It is considered to be important that the student is doing a complete job, including the accomplishment of all the sketchwork, the making of preliminary models, product drawings and modelling.

Prerequisite: Industrial Design 85.330*

Day division, Second term: Lectures and tutorials three hours a week, laboratory ten hours a week.

Industrial Design 85.340

Industrial Practice Internship Field Reports

During the periods of internship in industry, or in alternative internships approved by the School, the student is required to study technological phenomena in their relationship to Industrial Design. At the end of each period, a field report, describing such phenomena and relationships must be submitted to the School for evaluation and marking. The quality and quantity of the field reports must minimally reflect a period of internship study of sixteen weeks. Copies of field reports will be filed in the School to be accessible to other students.

Industrial Design 85.360*

Anthropometrics and Ergonomics

Concepts of human engineering, anthropometrics and ergonomics will be studied, researched and experimentally applied. Special emphasis will be given to limits of human performance, visual and tactile displays, man-machine and man-environment interface, measurement, etc.

Day division, First term: Lectures and discussion two hours a week, laboratory three hours a week.

Industrial Design 85.361*

Anthropometrics and Ergonomics Workshop

Laboratory work and experimentation in anthropometric and ergonomic factors as they affect industrial design.

Day division, Second term: Lectures and discussion two hours a week, laboratory three hours a week.

Industrial Design 85.400*

Professional Practice in Industrial Design

The course surveys how industrial designers practise as independent consultants, and how they are employed in industry. The organizational aspects of independent offices of industrial design, their responsibilities towards their clients and their ways of operation will be compared with the role of industrial design and the organizational aspects of the profession within the framework of industrial management. Topics include the form of contracts for industrial design consultancy, ways of determination of fees, legal implications of the profession including those of patents and copyrights. The course will also deal with the organization of the profession on a national and an international basis. Representative industrial designers will be invited to give their views on professionalism and to present case histories of their operations.

Prerequisite: Industrial Design 85.200* (Architecture 76.206*).

Day division, Second term: Lectures and discussion three hours a week.

Industrial Design 85.401*

Industrial Design Seminar

Each year, a special topic will be chosen to be elaborated on and discussed. The topics will deal with problems in the relationship of Industrial Design to other disciplines. Experts in other disciplines will be invited to participate in and contribute to the seminar. Students are required to submit and defend a thesis, based on their participation in the seminar, at the time of presentation of the Fourth year Industrial Design Projects.

Prerequisite: Registration in Fourth year Industrial Design Projects.

Industrial Design 85.420*

Form Organization

Form organization attempts to design, define and prescribe solids of monolithic nature by means of an abstract system which can be used for instructional purposes to make and verify materialized approximations of such solids. A three-dimensional locus is an example of such a system; other systems are based on controlled growth patterns, geometric generation, typological generation, etc. The course intends to describe variations of such systems, which the students are required to apply in laboratory exercises.

Prerequisite: Engineering 88.100 or equivalent; Industrial Design 85.320.

Day division, First or Second term: Lectures, tutorials and laboratory six hours a week.

Industrial Design 85.421*

Advanced Studies in Form and Colour

Students may continue the research and study encountered in Industrial Design 85.320 by doing advanced research in some specific area of the phenomena of form and/or colour. Directed study.

Prerequisite: Industrial Design 85.320 or consent of the instructor.

Day division, First or Second term: Tutorials and laboratory six hours a week.

Industrial Design 85.430

Major Industrial Design Projects

The major Fourth year industrial design projects should represent a theme, from which one or more problem areas can be derived or narrowed down. The problem areas chosen should preferably be product oriented and be of sufficient complexity. Preferably, the assignment should be undertaken in co-operation with off-campus organizations, industry, etc., to increase the realism of the approach, at the same time introducing the student to practice and placement. Depending on the nature of the assignment, the results of the design work in these major projects may deviate from the usual accomplishments of the executive phase of the process, but they should bear evidence of the student's involvement and thorough approach. See also: Industrial Design Projects, and Fourth year Industrial Design Projects (p. 203-204).

Prerequisite: Industrial Design 85.331* or special approval of the Industrial Design Projects Committee.

Industrial Design 85.431

Minor Industrial Design Project I

The minor industrial design projects mainly serve to enable students to demonstrate their versatility. The choice of the minor projects, therefore, must be in balance with the major project. Although preferred, it is not strictly required that the minor projects be product-design oriented, nor need they be derived from actual utilization-problem areas. They could also represent research in complementary design fields, such as communication, graphic design or design experiments. Although the minor design projects may be of a less complex nature than the major project, they should always conform to academic standards of quality and be handled in the same systematic way and with the same thoroughness as the major project. See also: Industrial Design Projects, Fourth year Industrial Design Projects (pp. 203-204).

Prerequisite: Industrial Design 85.331* or special approval of the Industrial Design Projects Committee.

Industrial Design 85.432

Minor Industrial Design Project II

See Industrial Design 85.431

Prerequisite: Industrial Design 85.331* or special approval of the Industrial Design Projects Committee.

Industrial Design 85.435* and 85.436*

Special Industrial Design Studies

Special industrial design studies will be based on specific projects and may be conducted by faculty members who are specialists in a particular field of design. The regulations for Fourth year Industrial Design Projects (p. 204) do not apply to these studies, which are entirely under the supervision of the instructor.

Prerequisite: Third or Fourth year registration or special approval of the instructor.

Day division, First and Second term: Lectures, tutorials and laboratory six hours a week. (Course weight 8).

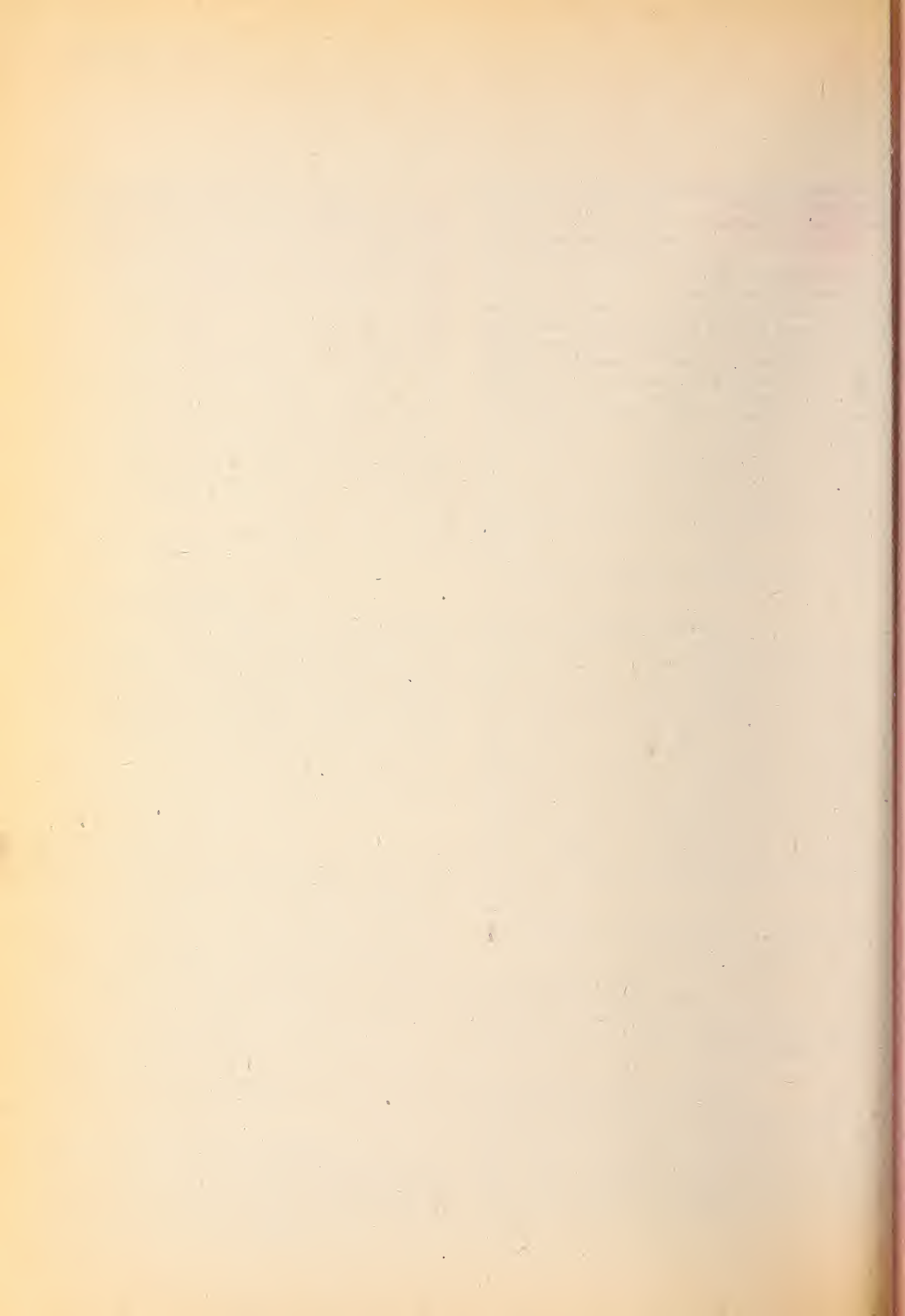
Industrial Design 85.450

Colloquium Cultural Subjects

This colloquium is seen as an opportunity to introduce various cultural subjects by experts from these fields.

The perspective of the colloquium is anthropological and the objective is to give the students a sense of context and relevance of industrial design as an integral part of our culture.

Prerequisite: Industrial Design 85.200* (Architecture 76.206*).



Officers of the College

Dean
J.T O'Manique

Faculty Registrar
To be announced

General Information

St Patrick's College has been providing students with the opportunity to pursue their undergraduate education in an informal and intimate atmosphere since 1932. Situated in an attractive corner of the Carleton University campus since 1973, the College facilities are new and distinctive and include laboratories, theatre, cafeteria, reading room, seminar rooms, lounges, and recreational areas. The College residence is located nearby and student activities at the College are diverse and plentiful.

As a constituent part of Carleton University, the College offers undergraduate instruction in the humanities and social sciences leading to a Bachelor of Arts degree. In addition, students at the College are able to select from the full range of courses offered in the main departments and in other Faculties of the University. At any time during their program, students interested in an honours degree are able to apply for acceptance into the appropriate program offered by the department of their choice at the University. Faculty members at the College have the special task of developing general programs of study in the liberal arts that are adapted to the needs of students seeking a broad university education.

Enrolment and class size at the College are small, not just because "small is beautiful", but because an ideal educational environment should invite active participation in the total intellectual life of the community. Many of the extra-curricular activities of the College involve work with and for citizens of the surrounding community. This tradition leads students to an awareness of the practical importance of what they are doing, while providing a valuable community service.

Thus, sound academic programs, a close-knit community of students, faculty, and staff, and all the advantages of membership in a large university, offer the student at the College an exciting educational opportunity.

Admission Requirements

The following information summarizes the admission requirements for the University. Full details regarding Admission Requirements are contained on pp. 25-30.

Qualifying University Year

The Ontario Secondary School Graduation Diploma. A 70% average must be presented on a minimum of 10 Advanced or Enriched Phase credits at Levels 3 and 4, including two of English, a language other than English, and Mathematics, at Level 4.

First Year

The Ontario Secondary School Honour Graduation Diploma with a minimum 60% average; or the successful completion of Qualifying University year Arts.

Advanced Standing

Applications for admission with advanced standing to the Second or Third years of the program will be evaluated on an individual basis. General information regarding transfer students appears on pp 28-29.

Mature Matriculation

Persons who lack the normal entrance requirements as published in this Calendar but who are twenty-three years of age or over, prior to the session in which they wish to register, may receive consideration for admission to the degree program.

Enquiries regarding admission to St. Patrick's College should be directed to the University Admissions Office.

Registration Procedures

All students will be provided with academic counselling during the registration period. This will enable new students to discuss their degree programs with a Faculty Adviser before actual registration and it will ensure that returning students are satisfactorily completing degree requirements. Detailed information regarding the orientation and registration procedures will automatically be forwarded to all new and returning students of the College.

Once registered, students will make all course changes, withdrawals and program changes through the Faculty Registrar's Office. All changes must be made by the deadlines listed under Academic Year pp. 7-9.

Summer Session

Students wishing to register for Summer courses must obtain a letter of permission from the Faculty Registrar's Office to ensure that their Summer program meets Major and overall degree requirements.

Promotion

All regulations regarding course load, standing, promotion, failure, supplementals, and graduation are to be found on pp. 52-58. Any questions regarding the interpretation of these regulations should be directed to the Faculty Registrar's Office.

Appeals

Students have the right to appeal decisions relating to the application or interpretation of academic regulations made by the Faculty. Students considering such an appeal should consult with the Faculty Registrar's Office. Appeals must be made in writing and should be submitted to the Secretary, Committee on Admission and Studies, c/o the Registrar's Office.

Degree Programs

The Bachelor of Arts degree programs are designed to provide opportunity for a liberal education with varying degrees of specialization. The following types of degree programs are available to the student.

1. The B.A. program with a Major;
2. The B.A. program with a Combined Major;
3. The General B.A. program;
4. The Honours program;
5. The B.A. in Canadian Studies.
6. The B.A. program with a Major and a concentration in Criminology and Corrections.

One of these programs will be chosen by the student, normally at the beginning of Second year.

A total of twenty full courses or equivalent after Junior Matriculation (Ontario Grade 12), or fifteen full courses or equivalent after Senior Matriculation (Ontario Grade 13), are required for any of these programs.

Major Program

The program requires some degree of specialization within one discipline. Students will take from five to seven courses in their declared Major subject (from First to Third years) including any individual courses required by the discipline.

The program is to be completed in consultation with the Co-ordinator of the discipline concerned. If a student at the College elects to Major in a subject which is offered completely in a main department, then the requirements to be followed for a Major are those of the department, and the student must select courses in consultation with the Departmental Adviser.

To enter Third year of a Major program a student must have at least a C- average in the courses of his Major and must also comply with any additional requirements of the program. A student below the required standing at the end of the year prior to graduation may have to withdraw from his Major.

Combined Major Program

This program permits greater breadth within the framework of a Major program in that students

specialize to a lesser degree than in the Major program, in two disciplines. It is normally preferable to work in two related disciplines, but students are free to choose combinations that best suit their needs, abilities and inclinations.

The student will take a minimum of four or five courses in each of the disciplines (from First to Third years) including any required courses for a Combined Major in those disciplines. An average of at least C- must be maintained in the subjects in each discipline. The program, including courses in other subjects, will be chosen in consultation with professors of both Major disciplines.

General Arts Program

This program permits the greatest degree of breadth in course selection. Although no specialization in any discipline, or disciplines, is required; a somewhat better overall performance than in the Major programs is demanded. The following regulations regarding the General B.A. program should be noted:

1. Students must declare their intention to obtain a General Bachelor of Arts degree before the completion of their last five credits.
2. All students in the program will be required to complete at least one full 300-level course.
3. All students, including those who transfer into the General B.A. program from another university or from another faculty within the University, will be required to complete at least five courses from the St. Patrick's College offerings listed in the Calendar.
4. The student must have an overall average of at least C- in those courses taken for the degree.

Although students are free to choose any pattern of courses that complies with the general regulations, they must plan a program seriously and intelligently in consultation with an adviser appointed by the General Program Committee.

Honours Program

Students interested in taking an Honours degree and wishing to enrol at St. Patrick's College must:

1. indicate their intention to obtain an Honours degree either on application to admission or by contacting the College's Registrar's Office;
2. have their programs approved by the appropriate departmental honours adviser.

General information and regulations regarding the Honours program is found on pp. 58-60.

Bachelor of Arts in Canadian Studies

This program is a three year undergraduate program leading to a B.A. degree with a Major in Canadian Studies. Its aim is to provide students with a multidisciplinary view of Canadian Society. Such a program is most appropriate in a University situated in the nation's capital and already possessing a well established graduate Institute of Canadian Studies. In addition to this program, offerings in Canadian Studies at both the graduate and undergraduate levels exist in many other divisions of the University and students are referred to appropriate sections of the Calendar for information on these courses.

The College program is a highly structured one designed primarily for the student who wishes to pursue Canadian Studies in a unified way and who has a special interest in bilingualism.

Two options are available with the student following one stream or option during the three years of the program. The two options are:

1. a humanities option focusing on Literature, Language, History;
2. a social science option focusing primarily on Political Science, Economics, Sociology.

A fairly high degree of competency in the French language will be required of students for the completion of this program. Special courses and seminars are designed to achieve this end. As the University is situated in a bilingual community, students will be encouraged to take advantage of the numerous opportunities to develop facility in French. Complete fluency in French is not required for entrance to the program. A well motivated student with at least four years of High School French or its equivalent should be able to pursue the program successfully due to the French language training inherent in the program. For Ontario students Grade 13 French is recommended.

The following is a list of the courses which students will follow depending on the option which they choose.

Humanities Option (Literature, Language, History)

First Year

1. History: Western European History with special attention to the conquest of the New World (History 24.101);
2. English Authors from Chaucer to Eliot (English 18.100 or Twentieth Century Literature (English 18.162) or Introduction to French Literature (French 06.100 or 20.161);
3. Contemporary English-Canadian and French-Canadian Literature (Interdisciplinary 04.188);
4. Ideas of Man and Society in Canada (Philosophy 32.202);

5. French Language course requirement (a placement test will be used to determine the appropriate course).

Second Year

1. Canadian History (History 24.230);
2. English Literature: Pope to Wordsworth (English 18.242) or Survey of American Literature (English 18.272) or History: American History (History 24.240) or British and French History (History 24.256);
3. Survey of English-Canadian Literature (English 18.282);
4. French-Canadian Literature (French 06.227 or 20.267* and 20.268*);
5. A course pertaining partly to Canada and approved by the Canadian Studies Program Committee in one of the following disciplines: Economics, Political Science, Sociology, Geography, Anthropology, Law or Journalism.

Third Year

1. History: an aspect of Canadian History (one of History 24.230, 24.330, 24.331, 24.332, 24.334, 24.335, 24.336, 24.337, 24.354);
2. Non-Canadian History or Literature course: Commonwealth, British, French, or American.
3. English-Canadian Literature course: Canadian Poetry (English 18.381) or Canadian Fiction (English 18.383);
4. French-Canadian Literature (French 20.335, 20.465; or French 06.325);
5. A course from Social Sciences program in Canadian Studies, or a course from Fine Arts in Canada (Art History 11.200, 11.300, 11.305), or a course on English-Canadian English (co-ordinated by the Linguistics Department or English Department and/or French-Canadian French (French 20.332).

Social Science Option

First Year

1. Introduction to Political Science (Political Science 47.100);
2. Contemporary Economic Issues (Economics 43.101);
3. Principles of Sociology (Sociology 08.100) or Principles of Comparative Social Structure (Sociology/Anthropology 56.100);
4. Ideas of Man and Society in Canada (Philosophy 32.202);
5. French Language course requirement (a placement test will be used to determine the appropriate course).

Second Year

1. Canadian Government and Politics (Political Science 47.200);

2. The Economic Development of Canada (Economics 43.325);

3. Contemporary French Canadian and English Canadian Literature (Interdisciplinary 04.188);

4. A course in social science methodology: Principles of Sociological Theory and Methodology (Sociology 08.206); or Research Methods in Anthropology and Sociology (Sociology/Anthropology 56.200); or Political Enquiry (Political Science 47.200);

5. French Language course. If the student has achieved the required competence in French by the completion of French 20.211, 06.222, or the equivalent, then a Canadian Geography course is recommended.

Third Year

1. Topics in Canadian Government: Political Science 47.300*, 47.301*, 47.302*, 47.304*, 47.335*, 47.336*, 47.340;

2. Topics in Canadian Economic Policy: Economics 43.380;

3. History of Canadian External Relations: History 24.336;

4. Canadian Society: Sociology-Anthropology 56.248;

5. Seminar: State, Nation, Region and Interest Groups, with special reference to Canada.

Criminology and Corrections Program

Criminology is the multi-disciplinary study of criminal behaviour and includes the analysis of criminal law and corrections. Corrections include those policies and programs by which society attempts to deal with criminal behaviour.

The program has the following emphases:

1. Inquiry into the substantive areas of criminology and corrections, dealing with the problems and issues centered about theories of causation, law-making and policy formulation, and intervention strategies.

2. Inquiry into the foregoing aspects is grounded in the disciplines of the behavioural and social sciences, particularly sociology and psychology.

3. Practical experience and involvement in agency settings which provides the basis for translating the academic dimension into practical involvement and approaches to the various aspects of corrections and policy.

The program requirements include those for the disciplinary Major (or Combined Major) and those specific to criminology and corrections. On fulfilling these requirements the student will qualify for a Bachelor of Arts with a Major in Sociology*, a Major in Psychology or a Combined Major in Sociology/Psychology with the transcript notation "with a concentration in Criminology and Corrections."

* Students may choose either a Sociology Major or a

Sociology/Anthropology Major within the Department of Sociology and Anthropology.

There are two types of required courses:

1. Substantive Courses:

Sociology 08.270 Criminology

Law 51.234 Law and Anti-Social Behaviour

Psychology 49.342* Criminal Behaviour

Sociology 08.373* Correctional Policy

Psychology 49.391* Practicum in Community Psychology or Sociology 08.390* Independent Studies (in Correctional Policy)

2. Disciplinary Courses:

This includes an introductory level course in psychology and in sociology taken in the First year (Psychology 49.100, Sociology 08.100 or Sociology/Anthropology 56.100); and in the Second and Third years the courses outlined as those required for the Major programs in psychology or sociology.

In addition, the following optional courses are recommended as relevant to the program:

Sociology 08.255 or 56.255* Sociology of Deviance

Psychology 49.264* Abnormal Psychology

Psychology 49.343* Addiction

Law 51.102* Introduction to the Canadian Legal System

Sociology 53.256* The Police in Society

In addition to required and recommended courses, students will have the opportunity to attend a series of colloquia in criminology and corrections.

The normal pattern of course sequence should be as follows:

First year:

Introductory level courses in psychology and sociology.

Second year:

Sociology 08.270;

Law 51.234;

required disciplinary courses; and recommended courses.

Third year:

Psychology 49.342*;

Sociology 08.373*;

Psychology 49.391* or Sociology 08.390*; required disciplinary courses; and recommended courses.

Each student will be assigned to a faculty adviser for guidance on courses, placements and research projects.

Special Programs

During the course of their degree program students at the College are able to participate in some of the unique programs or courses of study which the College offers. These programs have been established either to complement the student's Major or General program or to provide him with an opportunity for maximum concentration in an area of specific interest. These

special programs are outlined in the descriptions immediately following. Students wishing to pursue any of these programs or courses of study are invited to contact the department concerned or the Faculty Registrar's Office for further information or course counselling.

Unified Liberal Arts Program

The purpose of the program is to foster and develop the intellectual life of the participant by means of an integrated approach to the study of selected themes of continuing concern to man.

This approach to learning is "unified", not simply because it seeks to explore these themes from the points of view of different disciplines, but more importantly because it seeks a genuine involvement in the different processes of intellectual enquiry: individual and group study, readings, lectures, discussions, seminars, panels, tutorials, essay and independent research projects.

The program is spread over a three-year period. The first year is equivalent to two of the student's five credits; the Second year to three credits; the Third year (independent study) to one credit. The total three-year program comprises six of the fifteen required credits for the Bachelor of Arts degree. With the nine remaining credits the student is free to pursue a Major program or to select any combination of courses for a General B.A.

Although the Program is designed to be a six-credit unit spread over three years, it is possible to take either the first-year, two-credit unit, or the Second-year, three-credit unit alone. The Second year of the Program is a prerequisite for the Third year, independent studies unit. There is a maximum enrolment of thirty students in First and Second years, and students who have completed the First year are given priority in registering for Second year.

Since the success of the program depends ultimately on the development of a community of scholars, maximum participation is required of everyone in the program. Attendance at the scheduled meetings is, therefore, essential.

The topic for First year, is "Freedom and Order", for second year, "The Nineteenth Century Revolution". The Third year involves intensive independent/tutorial study culminating in essays on a topic chosen by the student in consultation with a member of the ULAP staff. See also "Interdisciplinary Studies", p. 230.

French Language Program

The French Language Program is a year devoted to the study of French. Many students take six to nine French courses during a three-year period as part of the requirements for a Bachelor of Arts degree. Nevertheless, concentrated practice during one academic year will prove especially profitable. The program combines course offerings in French, in order to make possible

intensive study of the language during one academic year.

Program

The student's program will comprise five full courses. It is built around a nucleus of *two compulsory language courses*.

French

06.204 An advanced course in oral French.

06.222 An advance course in written French.

In 1977-78 the three other courses will be:

French:

06.100 An introduction to the literature of France (unless taken previously). (This is a required course for students at the First-year level.)

06.227 French Canadian literature.

One other French course chosen in consultation with a member of the French staff at St. Patrick's College.

Admission Requirements

Second year students enrolling in the program should have a C+ standing in French 06.100 or equivalent course; students taking the French Language Program in their First year should have 70% in Ontario Grade 13 French or the equivalent level of French.

Students enrolling in the program may thus be able to (a) complete up to five of the six required courses for a Major in French (b) complete some courses that may be counted towards an Honours program if they wish later to specialize in French.

Intensive Spanish Program

The Intensive Spanish Program is a year devoted exclusively to the study of Spanish. The program is divided into First term and Second terms.

First Term: Language Acquisition

The First term of the Intensive Spanish Program, offered on the St. Patrick's campus, is designed to provide a maximum of acceleration in language acquisition to well-motivated students with little or no previous training in Spanish. While aimed at the beginning student, the program is flexible enough to accommodate students who have already completed Grade 13, Spanish 38.015, or the equivalent.

The full First term covers the following courses:

Spanish

38.015 Beginning Spanish;

38.100 Intermediate Spanish;

38.201* Spanish Conversation.

Students may enrol in any course unit of this program for equivalent credit. Similarly, they may withdraw from the program, in exceptional cases, after each unit,

receiving equivalent credit after successful examination for work done.

This program entails fifteen hours of class per week plus language laboratory instruction and practice for a total of up to two and a half credits.

During the First term students will be charged with the responsibility of spending, together with the other members of the program, as much time as possible outside the classroom under the guidance of a "group leader" (a senior student in Spanish), who will encourage them to practise whatever material they are being exposed to in class, and who will organize drill sessions and other activities for the purpose of reinforcing what the students are learning during regular classroom hours. After successful completion of the First term students have the option of joining the Second term of the Intensive Spanish Program or enrolling in up to two and a half credits in the subjects of their choice.

Second Term: Language and Civilization

The Second term of the program is held in Spain, where students continue their studies by taking another two and a half compressed courses in Spanish (38.210, 38.202*, 38.301*, and 38.302*.)

For further information on the Second term program, see p. 147.

Admission Requirements

Students entering the Intensive Spanish Program at the First year level should have C+ in Ontario Grade 13 or in Spanish 38.015 or equivalent. Those enrolling in the Second term should have a C+ in a 100 level Spanish course. Students with little or no background in Spanish may have to be tested for aptitude for intensive training in Spanish.

Course of Studies in Social Policy

Students wishing to pursue a course of studies in Social Policy may choose either a Major program or a Combined Major program in Economics, Law (Combined Major only), Political Science, Psychology or Sociology. Such a course of studies involves the application of the social sciences to the analysis and formation of public policy. Students are likely to find that a Combined Major in these disciplines is a constructive way to overcome the specialist-generalist dilemma. Offerings relevant to the Social Policy course of studies are listed below.

Economics

- 43.101 Contemporary Economic Issues
- 43.210 Aggregate Economic Theory and Policy
- 43.236 Development of the Welfare State
- 43.325 Canadian Economic History
- 43.330 Social Economics
- 43.335 Political Economy in the Modern State
- 43.358 Organization Theory
- 43.365* The Economics of Planning

Law

- 51.100 Introduction to Legal Studies
- 51.201 The Elements of Law
- 51.205 Introduction to Public Law
- 51.234 Law and Antisocial Behaviour
- 51.284 Law of the Family
- 51.324 Tax Law and Policy
- 51.353 Civil Liberties and Human Rights
- 51.374 Local Government Law
- 51.380 Law of Environmental Quality

Political Science

- 47.100 Introduction to Political Science
- 47.200 Canadian Government and Politics
- 47.300* Provincial Government and Politics
- 47.301* Intergovernmental Relations
- 47.302* Canadian Municipal Government
- 47.303* Canadian Urban Politics
- 47.304* Political Parties and Elections in Canada
- 47.340 Canadian Public Administration

Psychology

- 49.250 Foundations of Developmental Psychology
- 49.253* Psychology of Adolescence
- 49.254* Adulthood
- 49.256* Behaviour Disorders of Childhood
- 49.257* Old Age
- 49.264* Abnormal Behaviour
- 49.268 The Person and His Behaviour: Theories of Human Conduct and Cognition
- 49.308 The Analysis of the Individual Behaviour
- 49.340 Personnel Psychology
- 49.342* Criminal Behaviour
- 49.343* Addiction
- 49.391* Practicum in Community Psychology
- 49.393* Practicum in Community Psychology

Sociology/Anthropology

- 56.241 Kinship, Marriage and the Family
- 08.245* Social Stratification
- 56.248 Canadian Society
- 53.251 Introduction to Population Studies
- 08.255 Sociology of Deviance
- 08.260* The Community
- 08.270 Criminology
- 56.315 Sociology of Education
- 56.320 French Canadian Society
- 53.352* Political Behaviour
- 08.371* Ethnic Groups
- 08.373* Correctional Policy
- 08.375* Medical Sociology
- 08.377* Sociology of Welfare Institutions
- 08.380 Social Policy

Course of Studies in Social Science Theory

Students seeking a broad understanding of all social sciences prior to selecting an area of specialization or who wish to acquire a General B.A. in the social sciences are advised to take fifteen of the following courses. To fulfill the normal requirements for a Combined Major, four full courses must be taken in each of the fields of the Major program.

Theoretical Studies in Social Science

Economics

- 43.100 Principles of Economics
- 43.200 Intermediate Micro-economic Analysis
- 43.210 Aggregate Economic Theory and Policy
- 43.344* History of Canadian Economic Thought
- 43.415 History of Economic Thought

Law

- 51.210 Theory of Law and Politics

Philosophy

- 32.200 Science and Man

Political Science

- 47.100 Introduction to Political Science
- 47.200 Canadian Government and Politics
- 47.230 History of Political Thought
- 47.270 Political Inquiry

Psychology

- 49.100 Introductory Psychology
- 49.200* Introduction to Psychological Research
- 49.205* Introduction to Psychological Statistics
- 49.268 The Person and His Behaviour: Theories of Human Conduct and Cognition
- 49.308 Analysis of Individual Behaviour

Sociology

- 08.100 Principles of Sociology
- 08.206 Principles of Sociological Theory and Methodology
- 08.301* Contemporary Sociological Theory
- 08.306* The Sociological Tradition

Course Selection

Qualifying University Year Program

Students in Qualifying University year select five courses chosen from those numbered 001 to 099 and 100 to 199 but may select no more than three courses from the 100 to 199 group. The further restriction on this latter group is that the student must have the prerequisites, if any, of the 100 to 199 group (e.g. English 18.162 may not be taken without the student having previously passed English 18.010 or Grade 13 English).

Students are warned that if they hope to select in a later year a course that has a prerequisite from Qualifying University year or Ontario Grade 13, they must plan their program to include these prerequisites.

Courses open to Qualifying University Year students

- English 18.010
- French 06.010
- Mathematics 69.006*, 69.007*
- Spanish 38.015

Three courses may be chosen from the following list provided prerequisites, if required, have been taken.

(Note: * indicates a half credit course):

- Classical Civilization 13.102*, 13.103*
- Commerce 41.130
- Economics 43.100, 43.101 (only one may be taken for credit)
- English 18.100, 18.162
- French 06.100, 06.104
- History 24.101
- Mathematics 69.107*, 69.127*
- Philosophy 32.100, 32.130
- Political Science 47.100
- Psychology 49.100
- Religion 34.100, 34.120
- Sociology 08.100, 08.110
- Spanish 38.100

Additional University courses open to Qualifying University year students are listed on pp. 60-62. Students requesting to take courses outside these listings require the permission of the instructor.

First Year Program

Students in First year may arrange their studies by selecting one of the College programs (Canadian Studies, Criminology and Corrections, French Language Program or Intensive Spanish Program) or by registering for a regular five course program. The descriptions for the special programs are outlined on pp. 214-218.

In the regular five course program the student is free to choose courses from those appearing in the list below. As the course selection is determined by the students they should bear in mind the field or fields that they will be choosing as an area of concentration and accordingly ensure that the prerequisite courses are taken as far as possible in First year. In order to assist students with their course selections there will be an orientation session before registration during which students may discuss their program with a Faculty adviser.

Note: * indicates a half credit course.

Classical Civilization

- 13.102* Aspects of Greek Civilization
- 13.103* Aspects of Roman Civilization

Economics

- 43.100 Principles of Economics
- 43.101 Contemporary Economic Issues
- (Only one of 43.100 or 43.101 may be taken for credit)

English

- 18.100 English Authors from Chaucer to Eliot
- 18.162 Twentieth Century Literature

French

- 06.100 A General Introduction to French Literature
06.104 Langue et littérature du XXe Siècle
(Other French courses with permission of the French staff)

History

- 24.101 Introduction to Modern History

Mathematics

- 69.107* Elementary Calculus
69.127* Topics in Calculus and Algebra

Philosophy

- 32.100 Themes in History of Philosophy
32.130 Social and Political Philosophy
32.201* Logic
32.266 Personal Ideals and Lifestyles

Political Science

- 47.100 Introduction to Political Science

Psychology

- 49.100

Religion

- 34.100 Introduction to World Religions
34.120 Introduction to the Bible

Sociology

- 08.100 Principles of Sociology
08.110 Principles of Anthropology

Spanish

- 38.015 Elementary Spanish
38.100 Intermediate Spanish

In addition to these courses which are offered in the College pp. 60-62 lists additional courses throughout the University which are available to First year students. Students requesting courses outside these listings require the permission of the instructor.

Second and Third Years

Upon successfully meeting the promotion requirements at the end of First year (as outlined on p. 54) the student will proceed on the Course Credit System. Under this system there is no promotion from one year to the next. Credits are accumulated individually according to a pattern approved by the Faculty and the Major or Honours department. A student must complete his program within seven years of promotion to the Course Credit System.

Students should declare their Major before entry to Second year. To enter Third year of a Major program a student must have at least a C - average in the courses of his Major or Majors, and must also comply with any additional requirements of his program.

Students in Third year who wish to transfer to an Honours program are expected to consult with the chairman of the department as well as the Co-ordinator

of the Major discipline at the College and to then make formal application on a form obtainable at the Registrar's Office.

Graduation

Students anticipating graduation must complete an Application for Graduation at the Registrar's Office. These applications must be completed according to the following deadlines:

Spring Graduation: February 1

Fall Graduation: September 1

Classics

Officer of Instruction

Assistant Professor
R.L. Jeffreys

General Information

Classics is the traditional name given to the study of ancient Greece and Rome. Ancient Greece was a seminal period in man's intellectual and artistic development. Rome absorbed Greek culture, added her own contribution and made Greco-Roman culture the basis of Western civilization. The classical period, then, is worth studying both for its own sake and for the immense influence it has exercised on later periods including the present.

It is recognized that few students are now able to study Greek and Latin in sufficient depth to permit appreciation of the literature in the original. It would be unfortunate if familiarity with classical culture were confined to so narrow a group. Many aspects of ancient civilization can be fruitfully discussed without a knowledge of Latin and Greek, and none of the courses offered at St. Patrick's College requires this knowledge. A language requirement is, however, laid down for majors.

Major in Classical Civilization

Students who Major in Classical Civilization must take a minimum of six courses in this field. The courses offered at St. Patrick's College are varied from year to year and attention is also drawn to the range of courses offered in the Classics Department. In addition the student is required to take Greek or Latin at the .015 level.

Combined Major

Classical Civilization is a suitable subject to study as a Combined Major with such subjects as English, French, History, or Religion. Four courses in Classical Civilization are required.

Courses Offered

Classical Civilization 13.102***Aspects of Greek Civilization**

An introduction to Greek antiquity in which the main characteristics of classical Greece will be discussed. There will be appropriate readings from Greek authors in translation.

Day division, First term: Lectures two hours a week.

R.L. Jeffreys, M.E. Welsh

Classical Civilization 13.103***Aspects of Roman Civilization**

An introduction to ancient Rome in which the main characteristics of Roman civilization will be discussed.

There will be appropriate readings from Latin authors in translation.

Day division, Second term: Lectures two hours a week.

R.L. Jeffreys, M.E. Welsh

Classics 13.312**Greek and Roman Drama**

A study, in translation, of Greek and Roman tragedy and comedy; the origins, character and development of the ancient theatre. Plays by the following authors will be discussed: Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence, Seneca.

Day division: Lectures and discussions two hours a week.

D.G. Beer

Classics 13.344**Women in Antiquity**

A study of women in antiquity, primarily in Greece of the Classical and Hellenistic periods, and in Rome of the late Republic, early Empire and the early Christian period. The course will concentrate on the role of women (and the various conceptions of that role) in society, both within and without the family; and some consideration will be given to the "types" of women that appear in literature. (Also listed as History 24.304.)

Evening division: Lectures and discussions two hours a week.

R.C. Blockley

Economics

Officers of Instruction

Co-ordinator
R.F. Neill

Associate Professors
G.E. Clarke
R.F. Neill

Sessional Lecturers
B.J. Bryson
L. Kenward
R. Moores

General Information

The program in Economics at St. Patrick's College is designed to enable students to acquire a reasonably broad understanding of the discipline. Certain "core" courses, listed below, are required courses for Majors and Combined Majors. Other courses offered allow students to select for intensive study those areas which interest them. The overall program is generally slanted in the direction of political economy, that is, the institutional background to and the policy implications of specific areas of economic study. (See Economics 43.300, 43.236, 43.325, 43.330.)

Major in Economics

Students who Major in Economics must take a minimum of six courses in the discipline. Students should have Grade 13 Mathematics or equivalent, because Mathematics 69.107* and 69.127* are requirements in the First year. A student's program must include Economics 43.100 or 43.101 and 43.200, 43.210, 43.220, and two other courses, one at the 300 level, or two of 43.201*, 43.211*, 43.250*, and one at the 400 level, in Economics. Commerce 41.130 (Introductory Accounting) may be taken for credit but will not count in the total of six required courses. The student's program for the Second and Third years must be approved by the co-ordinator of Economics at the College.

Combined Major in Economics

If a student elects a Combined Major, one of which is Economics, he is required to take a minimum of five courses: Economics 43.100 or 43.101, 43.200, 43.210, one 400-level course and another economics course chosen in consultation with the co-ordinator at the College.

Honours Program

Students intending to enter the Honours program in Economics must consult with the Supervisor of Honours Studies in Economics.

Courses Offered

Economics 43.100

Principles of Economics

This course provides a concise and fairly rigorous introduction to key theoretical concepts of economics. These concepts are developed with a view to being applied to Canadian economic problems such as unemployment and inflation, monopoly control, international trade and foreign ownership, poverty and the distribution of income. The policy implications of these various problems are also discussed.

This course cannot be taken for credit if Economics 43.101 has been taken.

Evening division: Lectures three hours, discussion one hour a week.

Economics 43.101

Contemporary Economic Issues

A discussion of various Canadian economic problems such as unemployment and inflation, monopoly control, international trade and foreign ownership, poverty and the distribution of income. The policy implications of these various problems are discussed. A number of theoretical concepts are developed as the need arises. A student who has taken Economics 43.101 and obtained a grade of C- or better will be permitted to Major in Economics after the completion of prescribed additional readings in Economics.

This course cannot be taken for credit if Economics 43.100 has been taken.

Day division: Lectures three hours, discussion one hour a week.

Economics 43.101 M

Contemporary Economic Issues

Economics 43.101 M is a self-paced Modular section of Economics 43.101. The Resource Centre (Room 301 St. Patrick's) will be open on Saturdays, and at other times to be designated.

Economics 43.101 S

Contemporary Economic Issues

January Admission, six hours a week, Spring term registration at St. Patrick's College.

Economics 43.200

Intermediate Micro-Economic Theory

The modern analysis of production and distribution with special reference to the determination of the condition which maximize social welfare. The major causes of departure from the social welfare optimum in a free employment economy with particular attention to imperfections in competition.

Prerequisite: Economics 43.100 or 43.101.

Evening division: Lectures three hours a week

Economics 43.210**Aggregate Economic Theory and Policy**

An examination of modern macro-economic theory with special reference to domestic and international monetary theory. A survey of Canadian and international financial institutions and arrangements. A critical examination of macro-economic problems and policies.

Prerequisite: Economics 43.100 or 43.101.

Day division: Lectures three hours a week.

Economics 43.220**Statistical Methods in the Social Sciences**

An introduction to statistical inference.

Prerequisites: Mathematics 69.107* and 69.127* or equivalent and one of Economics 43.100, 43.101, Political Science 47.100 or Sociology 08.100 or permission of the instructor.

Evening division: Lectures two hours a week, laboratory two hours a week.

Economics 43.236**Development of the Welfare State**

An examination of social security legislation and of the social and demographic conditions which gave rise to legislation. The industrial conditions of the nineteenth century and the depressed conditions of the 1930's will be especially noted. The Beveridge report in England and the Marsh report in Canada will be seen as major influences leading to existing social security arrangements in Canada in the 1970's. The strengths and weaknesses of existing programs, and some of their macro- and micro-economic effects will be examined.

Prerequisite: Economics 43.100, 43.101 or Sociology 08.100. Students are advised to take this course as a preliminary to Economics 43.330.

Day division: Lectures and discussion three hours a week.

Economics 43.300**Labour Economics**

An introduction to labour economics covering topics such as North American unionism and collective bargaining, comparative trade unionism, the economics of wages, public policy issues in a Canadian context.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.304**Public Finance**

Public expenditures and their relations to economic activity; public revenues; principles of taxation; public borrowing and the public debt; fiscal policy; federal-provincial fiscal arrangements.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.325**Canadian Economic History**

The development of national economic policy in Canada. The evolution of policies to bring about economic growth, regional redistribution and favourable

external trade, from the beginning of settlement to the present time. (Also listed as History 24.325.)

Prerequisite: Economics 43.100 or 43.101.

Day division: Lectures and/or seminars two hours a week.

Economics 43.330**Social Economics**

An examination of some of the ways in which public authorities attempt to reshape the economic environment towards a greater conformity to social values. The objectives and practice of social security schemes, housing policy, "the war on poverty" etc. will be considered.

Prerequisite: Economics 43.100 or 43.101.

Day division: Lectures two hours a week.

Economics 43.343**Special Studies in Canadian Economics**

Content of this course varies year by year, topics to be determined by the instructor invited to offer the course.

Prerequisite: Economics 43.100 or 43.101.

Day division.

Economics 43.344***History of Canadian Economic Thought**

The course summarizes and analyses the literature produced by Canada's response to the economic conditions of a satellite state. It is an account of the economic theories and policies that have characterized the frontier in its protest against metropolitan power, from Pierre Boucher in the seventeenth century to Melville Watkins in the twentieth.

Text: Goodwin, *Canadian Economic Thought*.

Prerequisite: An introductory course in Economics, Canadian History or Canadian Politics.

Summer 1977, Evening division, First term: Lectures three hours a week.

Economics 43.360***Topics in International Economics**

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Day division, First term: Lectures two hours a week.

Commerce 41.130**Introductory Accounting**

An introduction to basic accounting systems involving the use of double-entry bookkeeping. A study of the theory of the basic accounting equation. An analysis of the various books of original entry and their relationship to control ledgers and the preparation of periodic financial statements. The form and content of financial statements of retail and manufacturing concerns with emphasis on sole proprietorship and partnership operations. An introduction to corporate organization and operation, the preparation, analysis and interpretation of financial and other accounting statements; basic cost accounting concepts.

Evening division: Lectures three hours a week.

English

Officers of Instruction

Co-ordinator
M. Ryan

Professor Emeritus
L.A. Cormican

Associate Professors
K. O'Donnell
S.C. Russell
M. Ryan

Assistant Professors
A.A. MacKinnon
T. Nollet
J. Noonan

Major Program

Every student who elects English as a Major subject must have his program approved by a member of the Department. The Major in English consists of a minimum of six courses in English, as follows:

1. a First-year course in English, preferably English 18.162;
2. English 18.232 in the Second year;
3. four additional courses in English which must include 18.242 or 18.352 (both may be taken if desired).

With approval of the Department, a student may arrange in special cases a course program which would allow alternatives to English 18.232, 18.242 and 18.352. In order to continue in the Major or Honours program, a student must attain a grade-point average of 4.0 or better in the First-year course in English. A grade-point average of at least 4.0 must be maintained thereafter in English courses.

A Combined Major in English and another subject will include at least five courses in English. English 18.232 is required, along with either 18.242 or 18.352 (or in special cases approved alternatives). Both departments must approve a combined program.

Students wishing to take advantage of the intimacy of the St. Patrick's College environment may plan their program with reference to this tentative schedule of offerings:

1977-78: English 18.100, 18.162, 18.232, 18.236, 18.242, 18.253, 18.272, 18.282, 18.304, 18.352, 18.361.

1978-79: English 18.100, 18.162, 18.204, 18.232, 18.236, 18.242, 18.252, 18.263, 18.282, 18.352, 18.390.

1979-80: English 18.100, 18.162, 18.232, 18.236, 18.242, 18.253, 18.272, 18.282, 18.300, 18.361, 18.364.

Honours Program

Students intending to proceed to the Honours degree in English will (a) Major in English; (b) discuss their program with the Honours advisers at St. Patrick's College, and in the Department of English, Faculty of Arts; and (c) fulfill the requirements for entering Fourth-year Honours (See p. 78).

Courses Offered

English 18.100

English Authors from Chaucer to T.S. Eliot

A study of significant works of English literature presented as a general historical survey from the fourteenth to the twentieth centuries.

Prerequisite: First-year standing.

Day division: Lectures three hours a week.

M. Ryan

English 18.162

Twentieth-Century Literature

For Major and Honours students in the First year Undeclared students may also enrol. An introduction to literary study, examining the poetry, drama, and fiction of the twentieth century. The relation between critical ideas and literary works will be emphasized. The course will consider the work of Joyce, Conrad, Woolf, Eliot, Yeats and Williams, and a selection of novels, plays and poems.

Prerequisite: First-year standing.

Day division: Lectures and seminars three hours week.

A.A. MacKinnon

English 18.202

The History of Comedy and Satire

A critical examination of the comic and satiric literature from the classics to the contemporaries. The theory and practice of comedy in various forms. Types, techniques and themes of satire. The influence of Greek and Roman authors on English writers of comedy and satire.

Not offered 1977-78.

English 18.204

Dramatic Genres

A study of selected plays representing the major genres of dramatic literature. Special attention will be given to analysis of these plays in relation to their performance. Portions or the whole of some plays included in the course will be rehearsed and presented by the class as part of the assigned work of the course.

Prerequisites: A First-year course in English and permission of the instructor.

Not offered 1977-78.

English 18.232

English Studies I

The required course for Second year Honours and Major students. A selection of major authors from Chaucer to Milton will be studied intensively, and their intellectual and artistic relationships emphasized.

Prerequisite: A First-year course in English or permission.

Day division: Lectures and seminar three hours a week.

M. Ryan

English 18.236

Shakespeare

A study of Shakespeare's environment and his development as a dramatist, with reading of a selection of his plays.

Prerequisite: A First-year course in English or permission of the instructor.

Evening division: Lectures three hours a week.

L.A. Cormican

English 18.242

English Studies II

A required course for Honours students in their Second year. Major students, and Combined Majors and Combined Honours students must take either this course or English 18.352, and may take both. The course covers the literature of the Restoration and the eighteenth century. Major authors to be studied will generally include Dryden, Pope, Fielding, Johnson and Blake.

Prerequisite: A First-year course in English.

Evening division: Lectures and seminar three hours a week.

S.C. Russell

English 18.252

Victorian Poetry and Prose

A study of the Major poetry and prose of the Victorian period.

Prerequisite: A First-year course in English.

Not offered 1977-78.

English 18.253

The Novel from Dickens to Conrad

A study of the English novel from the High Victorian period of Dickens, Thackeray and Eliot to World War I.

Prerequisite: A First-year course in English.

Day division: Lectures three hours a week.

A.A. MacKinnon

English 18.263

The Novel in the Twentieth Century

A study of twentieth-century American, British and Canadian novels.

Prerequisite: A First-year course in English.

Not offered 1977-78.

English 18.272

American Literature

A study of the development of the American tradition in literature: the major writers, including Emerson, Thoreau, Hawthorne, Melville, Whitman, Mark Twain, Emily Dickinson, Henry James, Crane, Dreiser, Sherwood Anderson, F. Scott Fitzgerald, Hemingway, and T.S. Eliot.

Day division: Three hours a week.

S.C. Russell

English 18.282

Canadian Literature

A study of the development of Canadian literature in English from its nineteenth-century beginnings to the present.

Prerequisite: A First-year course in English or permission of the instructor.

Evening division: Lectures three hours a week.

K. O'Donnell

English 18.300

Criticism

Offered on Main Campus.

T.H. Coulson

English 18.304

Drama to the Nineteenth Century

A survey of the world dramatic literature from the classical period to the end of the Romantic period, with special emphasis on a comparison of the various periods of English drama with other traditions. Certain major dramatic genres will be discussed where relevant, e.g., classical tragedy and comedy, the mystery play, the Japanese Noh drama, the Italian *commedia dell'arte*, neo-classical and romantic forms of drama of the Renaissance, the Restoration comedy of manners, sentimental drama, Romanticism, etc.

Prerequisite: A First-year course in English.

Evening division: Three hours a week.

J. Noonan

English 18.348

Romanticism

Offered on Main Campus.

A. Heidemann

English 18.352

English Studies III

A required course for Honours students. For Majors, Combined Majors and Combined Honours, this is an alternative course to English 18.242. Both courses may be taken. A selection of nineteenth-century authors will be studied.

Prerequisite: English 18.232.

Evening division: Lectures and seminar three hours a week.

A. Heidemann

English 18.361

Twentieth-Century Poetry

A study of the criticism and poetry of the modern period with particular emphasis on such writers as G.M. Hopkins, Yeats, Pound, Eliot and others.

Prerequisite: A First-year course in English or permission of the instructor.

Day division: Lectures three hours a week.

M. Ryan

English 18.364

Modern Drama

Offered on Main Campus.

G. Wood

English 18.368

Studies in the Novel After World War II

A study of American, British and Canadian novels.

Not offered 1977-78.

English 18.390

The Literature of Existentialism

A study of the origins, development, and principal characteristics of existentialist literature as the paramount expression of the writer's concern with *la condition humaine*. Such themes as alienation, dread, subjectivity, freedom, authenticity, and death will be explored in selected works by major authors, including Hölderlin, Leopardi, Kierkegaard, Dostoevsky, Nietzsche, Tolstoy, Rilke, Kafka, Conrad, Hesse, Ionesco, Beckett, Sartre, and Camus. Attention will also be given the philosophic basis and literary antecedents of the existentialist posture. (Also listed as Interdisciplinary 04.390.)

Not offered 1977-78.

French

Officers of Instruction

Co-ordinator

O. Condemine

Professor

O. Condemine

Assistant Professor

J. Kealey

General Information

The knowledge of a second language remains a valuable asset in the modern world. A knowledge of French as a second language is particularly desirable in Canada. Undergraduates enrolling in First year in an Ontario university have already some knowledge of the French language, acquired at the primary and secondary levels. The aims of the French staff at the university level are as follows:

1. To consolidate the knowledge already acquired of the French language; to correct deficiencies in both the spoken and written language; and to provide opportunities for further practice. At the present time, some emphasis is placed on the spoken language since many undergraduates display weakness in this area.

2. To provide an interesting and stimulating cultural experience for the undergraduate. At the university level this is the important aspect of the study of French; it is in keeping with the idea of a "liberal arts" education. The student is introduced to the literature, to the thought and to the culture of France and of French Canada. In this manner the study of French becomes an integral part of a university education.

The pursuit of these two aims, practice of the language and pursuit of cultural values, are closely intertwined.

Major Program

Students wishing to Major in French should take French 06.100, obtaining a standing of C- or better. They will take also a minimum of five additional courses at the Second and Third year levels including two courses at the 300 level.

The choice of the five courses at the Second and Third year levels will be made in consultation with a member of the French staff. Students may take both French 06.204 and 06.222, or 06.205 and 06.222. Students having French 06.204 are excluded from 06.205 and vice versa.

Combined Major Program

Students wishing to take French as part of a Combined Major should take French 06.100, obtaining a standing of C- or better. They will take also four other courses at the Second and Third year levels, including at least one course at the 300 level. The choice of courses will be made in consultation with a member of the French staff.

Students may take both French 06.204 and 06.222 or 06.205 and 06.222. Students having French 06.204 are excluded from 06.205 and vice versa.

Honours Program

Students intending to apply for admission to the University's Fourth year Honours program in French should consult a member of the French staff regarding the requirements of the Department, which include two courses in another language (German, Italian, Spanish, Russian or Latin).

French Language Program

See p. 217.

Courses Offered

French 06.010

Cours de langue française

A study of the French language based on audio-oral principles. Emphasis is placed on oral comprehension and expression, without omitting the principles of written expression and comprehension. Attendance at all classes and laboratory sessions is compulsory.

Prerequisite: Permission of the instructor.

Day division: Four hours a week, including laboratory sessions. Enrolment limited to 20 students per section.

French 06.100

A General Introduction to French Literature

An introduction to French literature with special attention given to drama, poetry and the novel, and comprising a study of representative works of writers of the seventeenth, eighteenth and nineteenth centuries.

Day division: Lectures three hours a week.

J. Kealey

French 06.104

Langue et littérature du XXe siècle

Intensive study of selected contemporary works of France and of French Canada. Review of grammar. Emphasis will be placed on improving language skills through discussion groups, laboratory work and grammatical drills.

Not offered 1977-78.

French 06.110

Cours de langue française

A study of the French language based on audio-oral principles. Emphasis is placed on oral comprehension

and expression, without omitting the principles of written expression and comprehension. Attendance at all classes and laboratory sessions is compulsory.

Prerequisite: Permission of the instructor.

Day division: Four hours a week, including laboratory sessions. Enrolment limited to 20 students per section.

French 06.204

Cours avancé de français oral

Ce cours comporte des travaux de phonétique, des séances de conversation et des travaux de laboratoire. Course for students in the French Language Program.

Day division: Four hours a week comprising discussion and laboratory sessions.

O. Condemine

French 06.205

Pratique orale et grammaire

Exercices de phonétique, séances de conversation, travaux de laboratoire; grammaire et travaux de composition.

Day division: Three hours a week.

French 06.220

Histoire de la civilisation française

Survол des grandes étapes de la civilisation française suivi d'une étude plus approfondie de la vie matérielle, morale, intellectuelle et artistique de la France contemporaine.

Not offered 1977-78.

French 06.222

Cours avancé de français écrit

Eléments de grammaire et notions de style. Travaux pratiques. Composition. Ce cours a pour but d'approfondir les connaissances de la grammaire française, d'introduire les notions de style et de développer la maîtrise de la langue écrite par des travaux de composition appliquée. Course for students in the French Language Program.

Day division: Three hours a week.

J. Kealey

French 06.224

Culture et civilisation au Canada français contemporain

Une étude de la culture au Canada français depuis 1945.

Not offered 1977-78.

French 06.227

La littérature canadienne-française

Evolution du roman, de la poésie et du théâtre jusqu'à nos jours.

Day division: Lectures and discussion three hours a week.

O. Condemine

French 06.312

La littérature française du XVII^e siècle

Une étude des principaux écrivains français du XVII^e siècle.

Not offered 1977-78.

French 06.314

Aspects de la littérature française au XX^e siècle

A l'étude pour 1977-78: Le roman français.

Day division: Lectures and discussion three hours a week.

J. Kealey

French 06.320

Le théâtre français

Not offered 1977-78.

French 06.325

Littérature et civilisation du Canada français

Etude de certains aspects de la civilisation et des principaux écrivains du Canada français de 1840 à 1960.

Not offered 1977-78.

History

Officers of Instruction

Co-ordinator

To be appointed

Professors

David Chung

H.A. MacDougall

Associate Professors

Joan Greatrex

Paul Merkley

Assistant Professors

Deborah Gorham

F.J.K. Griezic

General Information

The History program is concerned primarily with the development of the societies of medieval and modern Western Europe and North America. The courses range from an introductory survey to specialized seminars, and are designed to encourage the student to develop an increasing capacity for critical, analytical thought through an enhanced awareness of the uses and limitations of historical evidence. A majority of the courses, while reflecting some of the historian's traditional interest in the politics of the past, place their greatest stress on the underlying social and intellectual aspects of change in human society.

Major Programs

Major in History

Majors in History will take a minimum of six courses in History as follows:

1. the introductory course (History 24.101), normally in the First year;
2. at least one 200-level course, normally in the Second year;
3. at least two 300-level courses, normally in the Third year.

Combined Majors

Combined Majors in History will take a minimum of four courses in History as follows:

1. the introductory course (History 24.101), normally in the First year;
2. at least one 200-level course, normally in the Second year;
3. at least one 300-level course, normally in the Third year.

Honours Program

Students intending to apply for admission to the University's Fourth year Honours program in History are reminded that they must take three 300-level courses, one of which must be History 24.388.

Classical Civilization Courses

See note on p. 104.

Courses Offered

History 24.101

Introduction to Modern History

An examination of the events of two centuries (1500-1700). The purpose of the course is to establish some common ground of factual preparation and some exposure to the problem of interpreting the past by close examination of this period, the matrix of subsequent world history. This course is recommended for all students in First year.

Day division: Lectures and discussions three hours a week.

J. Greatrex, P. Merkley

History 24.206

France and Germany during the Middle Ages

A study concentrating on the political development of the Merovingian and Carolingian Kingdoms, the Holy Roman Empire, and Capetian France.

Evening division: Three hours a week.

J. Greatrex, J.J. LaGrand

History 24.214

Church, State and Society from the Reformation to the Present

A study of Christian thought and institutions and their influence on the appearance of nation states and on the growth of modern pluristic society in Europe and America.

Evening division: Three hours a week.

D.G. Bowen

History 24.222

East Asian Civilization

For further details see entry in the offerings of main department, Faculty of Arts.

History 24.224

Revolutionary Movements in Europe, 1789-1848

Beginning with the French Revolution of 1789 the course includes such significant movements as romanticism, nationalism, the rise and implications of industrialism, and the development of socialist theory culminating in Marxism.

Not offered 1977-78.

History 24.230

History of Canada

A survey of Canadian history from 1763 to the present. For further details see the entry in the offerings of the main department. Tutorial groups only will be given at the College.

Day division: Lectures and discussions three hours a week.

History 24.240

History of the United States

A survey of American History. For further details see the entry in the offerings of the main department.

Evening division: Lectures and discussions three hours a week.

P.C. Merkley

History 24.304

Women in Antiquity

Offered as Classics 13.344.

History 24.308

Cathedral and Town

Urban life in England in the later Middle Ages. A seminar based on individual and group research into the history of selected English cathedral towns.

Prerequisite: History 24.105 or 24.205.

Day division: Three hours a week.

J. Greatrex

History 24.310

Problems in the History of Ideas

A study of western intellectual history since the Renaissance, which considers developments such as humanism, the enlightenment, romanticism, Darwinism and contemporary ideologies.

Day division: Seminar three hours a week.

D.G. Bowen

History 24.324

The Revolutionary Tradition in Europe, 1848 to the Present

A continuation of History 24.224 with emphasis on revolutionary developments in Italy, Germany, and Russia.

Not offered 1977-78.

History 24.325

Canadian Economic History

Offered as Economics 43.325.

History 24.335

Canadian Farm and Labour Movements since Confederation

A study of the organized responses to agrarian and industrial discontent.

Prerequisite: History 24.230.

Not offered 1977-78.

History 24.349

The United States since 1919

Prerequisite: History 24.240.

Not offered 1977-78.

History 24.354

Women and Society in Western Europe and North America, 1700-1970

An examination of the changes that have taken place in the position of women since the eighteenth century and the relationship of these changes to other social, economic, and intellectual developments.

Day division: Seminar three hours a week.

D. Gorham

Interdisciplinary Studies

Unified Liberal Arts Program

ULAP-I: Two First Year Credits

Freedom and Order

The theme, "Freedom and Order", gives the student the opportunity to study in depth one of the most important of the perennial human problems, while at the same time opens up to his view vast areas of thought. Professors from different disciplines will work with the students in their study of Freedom and Order through the writings of psychologists (Freud, Skinner...), philosophers (Plato, Hobbes, Sartre...), revolutionary thinkers (Marx, Marcuse, Fanon...), literary figures (Sophocles, Dostoevsky, Kafka...), religious thinkers (Buber, Teilhard de Chardin...), with consideration of their historical contexts and interconnections.

Those interested in ULAP-I should contact any ULAP staff member.

Not offered 1977-78.

ULAP-II: Three Second Year Credits

The Nineteenth Century Revolution

ULAP-II examines the revolutionary precedents which gave rise to many of the problems exercising the contemporary mind. These precedents are examined from many viewpoints: philosophy and religious thought (Kant, Schleiermacher, Hegel, Feuerbach...), literature and drama (Blake, Chekhov, Strindberg, Flaubert...), psychology and sociology (Freud, Jung, Weber, Durkheim...), political thinkers (Jefferson, de Tocqueville, Marx...), and social commentators (Carlyle, Arnold...).

Prerequisite: ULAP-I or permission of the ULAP staff.

ULAP-III: One Third Year Credit

Independent Study

Prerequisite: ULAP-I or -II.

For the general description of the program see p. 217.

Courses Offered

Interdisciplinary 04.188

Contemporary English-Canadian and French Canadian Literature

The purpose of this course is to study and compare the themes, myths, symbols and techniques of English-Canadian and French-Canadian literature. The readings for the course will be chosen from among the following: English-Canadian texts: *Fruits of the Earth*, Grove; Lampman; *Two Solitudes*, MacLennan; *Riel*, Coulter; *The Fire-Dwellers*, Laurence; Layton; Livesay; Purdy; Atwood; Nichol (Coach House); *You're gonna be all*

right, *Jamie Boy*, French: Textes canadiens-français: *Maria Chapdelaine*, Hémon; Nelligan; *Bonheur d'occasion*, Roy; *Tit-Coq*, Gélinas; *Salut Galarneau*, Godbout; Garneau; Brault; Chamberland; Lalonde; Duguay; *Les Belles-Soeurs*, Tremblay.

Interdisciplinary 04.201

Development of the Human Being

Featured are the prehistoric development of the species; current knowledge of inherited patterns of behaviour; the importance of language; social and psychological growth from early childhood through old age. The viewpoints of six disciplines will afford breadth of analysis. Depth of understanding will come from in-class discussion.

Lectures and discussions three hours a week.

Interdisciplinary 04.288

Introduction to Women's Studies

A survey course, designed to increase the student's understanding of the position of women in contemporary society. Instructors from a variety of disciplines will offer an introduction to such issues as biological and cultural sex differentiation, women and literature, women and religious institutions, women and politics, women and social and health services and women and the law. A brief introduction to the intellectual and social origins of feminism and a survey of women's place in Western European history will provide a context for examining women's position in contemporary society.

D. Gorham and E. Burwell (Co-ordinators), J. Barnes, R. Blockley, M. Boyd, N.E.S. Griffiths, H. Levine, A. Squire, J. Vickers

Interdisciplinary 04.303 (2 credits)

Biography and Autobiography

A study of representative biographical and autobiographical texts from the seventeenth to the twentieth century from the perspectives of English, Philosophy and Psychology. The structural principles operative within the work and its relationship to the milieu in which it was conceived will be examined. Texts studied will include Boswell's *Life of Johnson*, Johnson's *Life of Milton*, Strachey's *Eminent Victorians*, Alvarez's *The Savage God*, Sartre's *Search for a Method*, *Saint Genet and Words*, and Russell's *Autobiography*. Open to Third year students and others with permission of instructor.

Prerequisite: A First year course in English or permission of the instructor.

Day division: Lectures and seminars, six hours a week.

Interdisciplinary 04.390

The Literature of Existentialism

Listed as English 18.390.

Mathematics

Officers of Instruction

Assistant Professor

M. Helfenstein

Major and Combined Major Programs

Students who wish to pursue a Major or Combined Major in Mathematics should consult the departmental requirements as outlined on pp. 278-296.

Courses Offered

Mathematics 69.107*

Elementary Calculus

Functions, limits, derivatives, differentiation and applications, special functions, the definite and indefinite integral and techniques of integration.

Prerequisites: A pass in the Mathematics department placement test (or Mathematics 69.106*) and Grade 13 Functions and Calculus.

Day division, First term: Lectures three hours a week, two hours tutorial.

Mathematics 69.127*

Topics in Calculus and Algebra

Partial differentiation, introduction to differential equations, vector algebra and geometry and geometry in two and three dimensions, matrix algebra.

Day division, Second term: Lectures three hours a week and two hours tutorial.

Mathematics 00.257*

Problems in Statistics

Statistics as the science of decision-making with illustrations which include the following topics: probability theory, descriptive statistics, density functions, distributions, confidence intervals, use of t , x^2 , F distributions, tests of hypotheses, introduction to regression analysis, sampling theory.

Prerequisite: Mathematics 69.107* and 69.127*.

Not offered 1977-78.

Philosophy

Officers of Instruction

Co-ordinator
S.G. Clarke

Associate Professor
J.T. O'Manique

Assistant Professors
S.G. Clarke
D.E. Dubrule
B.I. Egyed

General Information

The Philosophy curriculum at St. Patrick's College has been designed with a view to three important aims of an undergraduate education: a familiarity with the history of ideas; an awareness of current socio-political problems; and an understanding of conceptual difficulties. Historically and critically oriented courses at all three levels which reflect these aims can be combined to form a coherent Major program or used to supplement programs in other disciplines. Interested students are encouraged to seek the advice of the Philosophy staff concerning the course offerings in Philosophy.

Major Programs

Major in Philosophy

Majors in Philosophy are required to take six courses in Philosophy to be chosen in consultation with a member of the discipline at St. Patrick's College. Not more than one 100-level course will be counted as credit for a Major.

Combined Majors

Special arrangements will be made for students proposing a Combined Major Program.

Honours Program

Honours in Philosophy

Students who plan to apply for transfer to the Fourth year of the Honours program in the Philosophy Department, Faculty of Arts, should consult the St. Patrick's College co-ordinator before the end of their Second year.

Courses Offered

Philosophy 32.100 (32.110)

Themes in History of Philosophy

This course is designed to familiarize the student with philosophical issues through historically influential writings. The development of a number of themes will be traced through the texts of major philosophers in the Western tradition. Among these themes will be the nature and extent of human knowledge, the validity of religious beliefs and moral values, the nature and destiny of man and the purpose and importance of philosophical thinking.

Day division: Lectures and discussion three hours a week.

S.G. Clarke, J.T. O'Manique

Philosophy 32.130 (32.120)

Social and Political Philosophy

A study of some of the major contemporary social and political issues such as alienation, education, freedom, power and revolution. The historical and theoretical roots of these issues will be explored through the works of such classical philosophers as Locke, Spencer, Marx and Dewey. Contemporary figures to be considered will include: Fanon, Galbraith, Jaspers, Marcuse and Mills. Not offered 1977-78.

Philosophy 32.200

Science and Man

An examination of the scientific view of the world. The course will begin with a discussion of general topics in the philosophy of science such as: revolutions in science, paradigms, objectivity, ideology, rationality, and the growth of scientific knowledge. Following this, specific philosophical issues in the science of man will be discussed, such as problems in perception, learning, and psychotherapy, the nature of some psychological concepts, problems in psychological research and method, and moral and political aspects of psychology. Day division: Lectures and seminars three hours a week.

B.I. Egyed

Philosophy 32.201*

Logic

An introduction to the techniques and philosophical implications of formal logic with emphasis on the following issues: translation of expressions into symbolic form, formulation and application of the rules of valid inference, the relation between logic and language, and the nature of logical necessity.

Open to First year students.

Not offered 1977-78.

Philosophy 32.202

Ideas of Man and Society in Canada

An examination of Canadian ideas of man, culture and society in the context of their philosophical traditions. Emphasis will be placed on the themes of nationalism; man's interaction with his natural and technical environment; the individual's relation to his past, his society and his culture; and the ideological aspects of traditionalism, social reform and revolution. Considerable attention will be devoted to the influence of European philosophers on Canadian ideas. In 1977-78 the following representatives of Canadian thinking will be discussed: G. Grant, N. Frye, H. Innes, C.B. McPherson, F. Underhill and F. Dumont.

Day division: Lectures and discussions three hours a week.

B.I. Egedy

Philosophy 32.220

Marxism

The aim of this course is to show how Marxism is both a continuation and a radical critique of the Western philosophical tradition. After a detailed examination of the nature of dialectical materialism, some traditional philosophical problems will be discussed from a Marxist point of view. Such issues as the nature of man, the way he creates (materially and intellectually) his environment, the historical forces which condition him, and the nature of alienation will be viewed through the writings of nineteenth century and contemporary Marxists.

Not offered 1977-78.

Philosophy 32.225

Reason and Revelation

A study of the evolution of western philosophy up to the end of the Renaissance. Theories of man, knowledge and reality will be traced from the early rationalism of the Greeks through the syntheses of reason with Christianity in the Middle Ages to the humanist rationality of the Renaissance. In-depth studies will be made of six important thinkers: Plotinus, Augustine, Thomas Aquinas, William of Ockham, Montaigne and Francis Bacon.

Day division: Lectures and discussions three hours a week.

D.E. Dubrule

Philosophy 32.230

Existentialism

This course is designed as an introduction to existentialism. Existentialism will be viewed as both an outgrowth of and a reaction to the philosophical thinking of its nineteenth century idealist predecessors, especially Hegel. An attempt will be made to show the relationship between phenomenology and certain existentialist thinkers. The course will try to bring out and clarify those basic concepts (the human situation, encounter, subjectivity, alienation, etc.) which help to define a philosophy as existentialist. The main philosophers to be examined will be Kierkegaard, Nietzsche, Sartre, and Heidegger, although some mention will also

be made of Marcel, Jaspers, and Buber. The course will also include some "existentialist" literature. Not offered 1977-78. (English 18.390 will be accepted for credit in place of this course.)

Philosophy 32.246*

Death

A study of major issues in philosophical thanatology. Problems will include the medico-legal definitions of death, philosophical concepts of death, our knowledge of death, the possibility of and evidence for survival of death and reincarnation, and the meaning and implications of some ways of dying: suicide, euthanasia, abortion, genocide and capital punishment.

Prerequisite: An introductory course in philosophy or Philosophy 32.266* or permission of the Department.

Day division: Second term: Seminars three hours a week.

D.E. Dubrule

Philosophy 32.266*

Personal Ideals and Lifestyles

Problems of describing, analyzing and evaluating personal ideals and lifestyles will be investigated. Emphasis will be given to the works of Iris Murdoch and Albert Camus.

Open to First year students.

Day division, First term: Lectures and discussion three hours a week.

S. Clarke

Philosophy 32.366*

Philosophies of Love

Philosophical theories of love will be studied with emphasis on their implications for understanding human nature and developing moral ideals.

Recommended background: Philosophy 32.266*.

Not offered 1977-78.

Political Science

Officers of Instruction

Co-ordinator
David Bellamy

Associate Professor
Frederic Kirk, Jr.

Assistant Professors
David Bellamy
Charles Schuetz

Major Programs

A Major in Political Science requires Political Science 47.100, one of 47.230, 47.232, or 47.270, and four or more additional courses in the Department. A Combined Major including Political Science, requires Political Science 47.100, and three or more additional courses.

A Major must obtain at least a C- in Political Science 47.100 to enter Second year and must maintain an overall average of at least C- in Political Science to continue into Third year.

Students who intend to continue in Honours or Graduate programs in Political Science should consult with members of the Department early in their program. (See p. 363 for a description of the Honours and Combined Honours requirements.)

Courses Offered

Political Science 47.100

Introduction to Political Science

Modern political ideas and institutions with particular attention to Canada, Britain and the United States.

Day division: Lectures and discussions three hours a week.

C. Schuetz

Political Science 47.200

Canadian Government and Politics

A survey of the political process and political institutions in Canada.

Prerequisites: Political Science 47.100 or permission of the Department.

Day division: Lectures and discussions three hours a week.

D. Bellamy

Political Science 47.260

International Politics

A survey of the structure of the international system; concepts such as the balance of power, collective security and sovereignty; the formulation and instruments of foreign policy.

Prerequisite: Political Science 47.100, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

C. Schuetz

Political Science 47.270

Political Inquiry

This course introduces the student to the elements of systematic political analysis. It covers all present modes of inquiry in the discipline, including survey research methods and their statistical background.

Prerequisite: Political Science 47.100.

Day division: Lectures and discussions three hours a week.

Political Science 47.321

Government and Politics of Western Europe

A survey of the political processes and institutions in the democracies of Western Europe, with emphasis on Britain, France, Italy and the German Federal Republic. Prerequisite: Political Science 47.100 and preferably 47.215.

Evening division: Lectures and discussion three hours a week.

F. Kirk

For other offerings in Political Science see p. 363.

Psychology

Officers of Instruction

Co-ordinator
R.B. Wells

Professor
F.R. Wake

Associate Professors
D.A. Andrews
W.E. Walther

Assistant Professor
R.B. Wells

General Information

The Psychology program at St. Patrick's College is intended to provide a background in the basic concepts and methods of modern behavioural science and to provide pre-professional experience and training in the behavioural analysis of human-social problems. Effective analysis and intervention in these areas requires a firm grounding in basic methodology and basic behavioural science. Hence, courses may survey the applied implications of behavioural science but stress methodology and basic theory and research in learning, perception, motivation, and physiology. At the advanced levels, the focus of the courses is on specific problems. Because the analysis of human-social problems must take place at several levels, the student will find that concepts from Philosophy, Mathematics, Biology and the Social Sciences recur throughout the program.

The Psychology program at St. Patrick's has also been planned with reference to the needs of the liberal arts student who does not want to Major in the discipline. The non-Major may select a broad survey of the discipline at the 100 level or go on to sample the basic concepts in Psychology at the 200 level. The problem-oriented courses are open to non-Majors who present the necessary prerequisites.

Psychology 49.100 is required of all new students wishing to take further courses in the Department. The following are basic "core" courses: Psychology 49.200*, 49.205* (or 49.305), 49.210*, 49.220*, 49.250*, 49.260*, 49.270*, 49.300* (or 49.301* or 49.302*). In most cases, there are specialized "branching" courses following upon these basic courses. As well, there are some courses which represent unique areas such as 49.342* and 49.330*. No great distinction is made by the Department between the year levels of courses numbered at the 200 or 300 level. Many 200-level courses are appropriately taken in the Third year and some 300-level courses are taken in the Second year.

The Department requires students in the B.A. programs to take at least one full-course credit in each of at least

three departments or areas outside Psychology. Of these, at least two must be taken at the 100 level or above in departments or interdisciplinary areas outside of the Faculty of Social Sciences. In the credits counted towards the degree, no student may offer standing in more than seven credits below the 200 level (including Psychology 49.100) in the Major program or in the B.Sc. Honours program, nor more than nine such courses in the B.A. Honours program.

The Department of Psychology normally calculates grade-point averages on the basis of all Psychology courses taken at Carleton University in which standing is offered for the purposes of graduation. The Department does not accept the transfer of letter grades from other Universities, excepting courses taken under the terms of reciprocal agreements (cf. p. 36), although appropriate credit will be granted for acceptable courses taken elsewhere.

Major Programs

Major in Psychology

The requirements for a Major in Psychology are a minimum of six credits in Psychology, including:

1. Psychology 49.100;
2. five of Psychology 49.200*, 49.205*, 49.210*, 49.220*, 49.250*, 49.260*, 49.270*, 49.300*, 49.301*, 49.302* (only one of the latter three courses may be credited towards this requirement);
3. two and one-half additional course credits in Psychology.

Note:

Psychology 49.305 may be substituted for 49.205* in 2, in which case only two additional course credits in Psychology are required in 3.

A student may not offer more than seven full course credits in Psychology in a Major B.A. program.

Combined Major

The departmental requirements for a Major program combining Psychology with another discipline are the same as for a Major, with the exception that, under 3 above, only one and one-half additional course credits in Psychology are required, for a minimum offering of five course credits in Psychology. The maximum remains at seven course credits.

Students taking Combined Majors are urged to include 49.200* and 49.205* (or 49.305) in their choice of Psychology courses.

Optional Courses Outside of Psychology

Within the liberal arts tradition, Majors are free to select their options from the range of disciplines represented within St. Patrick's College and the University. However, the Major's attention is directed to the following course which appears to complement the orientation of the Psychology program particularly well: Philosophy

32.200 (Science and Man) and the whole range of courses with a social policy emphasis outlined in the Sociology section of the Calendar.

Students in the B.A. program in Psychology may, if they wish, offer Computing Science 95.101* (p. 405) as one of their optional half credits in Psychology (but not to replace any of the specified Psychology courses). Students wishing to take advantage of this option should notify the Psychology Department undergraduate office on the appropriate form within two months of registration in the course.

Honours Programs

Students who decide to train for a career as a professional psychologist are advised to transfer to the Honours program not later than the end of the Second year. Such students should choose courses required for Honours students in their Second year.

Students who are considering an Honours program in Psychology are referred to p. 372 where the requirements for this program are described in detail.

Courses Offered

Notes:

1. * denotes a half course.
2. Because some branch courses may have limited enrolment and because many half courses are not open after the first week of registration, students are urged to participate in pre-registration formalities and to register for their full course load during the Fall Registration period.

Psychology 49.100

Introductory Psychology

The course provides a foundation for understanding human and animal behaviour and prepares the student for advanced study in psychology. Basic content is examined through lectures and reading. Further understanding of specific topics is gained through mini-courses which the student selects from the variety offered. The format of the course allows flexibility in scheduling and provides for self-paced completion of requirements. The workload approximates that of a three hour lecture course.

Psychology 49.200*

Introduction to Psychological Research

An introduction to the various research methodologies employed within contemporary psychology. Topics covered may include experimental, observational, case study and archival techniques.

Prerequisite: Psychology 49.100.

Psychology 49.205*

Introduction to Psychological Statistics

Basic properties of descriptive statistics, the logic involved in the traditional hypothesis testing approach,

and a variety of logical fallacies utilized in generating incorrect conclusions will be examined. In particular, students will be trained to recognize distorted results and conclusions unwarranted on the basis of empirical results. In addition, the impact of traditional hypothesis testing upon psychological research will be examined in relation to its limitations and misuses. The emphasis of the course will be upon logic and evaluation rather than techniques per se. (Precludes additional credits for Sociology/Anthropology 56.200 and Sociology 08.307*.)

Prerequisite: Psychology 49.100.

Psychology 49.210*

Introduction to Social Psychology

Introduction to contemporary theory and research in social psychology. Areas covered include attitude structure and change, small groups and social learning. (Students who wish to substitute Sociology 53.210 for Psychology 49.210* should consult their Psychology Department Adviser. Students may not offer both Sociology 53.210 and Psychology 49.210* for credit.)

Prerequisite: Psychology 49.100.

Psychology 49.220*

Biological Foundations of Behaviour

A general introduction to the biological bases of behaviour with particular reference to biological mechanisms associated with sensory and perceptual processes, motivation, emotion, learning and cognition.

Prerequisite: Psychology 49.100.

Psychology 49.250*

Foundations of Developmental Psychology

Basic principles of developmental psychology with a concentration on theories and methods. Emphasis is on the psychology of childhood and adolescence. (Students may not offer both Psychology 49.250* and Interdisciplinary 04.201 for credit.)

Prerequisite: Psychology 49.100.

Note:

No more than two of the following developmental branching courses may be credited towards the Bachelor's degree: Psychology 49.251*, 49.252*, 49.253*, 49.254*, 49.257*.

Psychology 49.253*

Psychology of Adolescence

Psychological growth and development from puberty to maturity. (Students may not offer more than one of Psychology 49.253*, Interdisciplinary 04.358 or 04.201 for credit.)

Prerequisite: Psychology 49.250*. Limited enrolment.

Psychology 49.254*

Adulthood

An examination of theories on maturity; the problems, training and adjustments required during adulthood. Classroom material will be augmented by projects and special field trips involving adults in the community.

Prerequisite: Psychology 49.250* or Interdisciplinary 04.201*

Psychology 49.256*

Behaviour Disorders of Childhood

A review of the problems of classification and interpretation. Specific problems covered include early childhood autism, minimal brain dysfunction, learning disabilities and school phobia. (Students may not offer both Psychology 49.255* and 49.256* for credit.)

Prerequisite: Psychology 49.250*.

Psychology 49.257*

Old Age

Aging will be examined from the standpoint of physiological and social change. Problems of retirement will be given special attention. Face-to-face contact will be provided by research and field trips to public and private homes.

Prerequisite: Psychology 49.250* or Interdisciplinary 04.201*.

Psychology 49.260*

Introduction to the Study of Personality

An introduction to the study of personality. Consideration of problems, methods and theories.

Prerequisite: Psychology 49.100.

Psychology 49.264*

Abnormal Behaviour

The course covers the classification, etiology and treatment of the behaviour disorders. Research with animals and humans will be reviewed. Some knowledge of psychoanalytic theory and behaviour theory will be assumed.

Prerequisite: Psychology 49.250* or 49.260* (or 49.100 and Third year standing.)

Psychology 49.268

The Person and His Behaviour: Theories of Human Conduct and Cognition

The individual and his behaviour are examined from the perspective of several theoretical positions within psychology, namely: psychoanalytic theory, social learning theory, dissonance theory and exchange theory. The course stresses theory and research in the interpretation of human behaviour. Equivalent to 49.260* and a half credit course (unspecified) in Psychology.

Not offered 1977-78.

Psychology 49.308

The Analysis of Individual Behaviour

A review of clinical, psychometric and operant methods in the study of individual behaviour. The contributions of the three approaches will be evaluated at the descriptive, predictive and functional levels. Ethical problems and principles will be reviewed. Some field and laboratory work will be required.

Prerequisites: Psychology 49.100 and 49.200*; either Psychology 49.205* or Sociology 08.307* are recommended.

Psychology 49.342*

Criminal Behaviour

An examination of behavioural approaches to the classification and treatment of offenders. Theories and research relevant to selected patterns of law-breaking and selected offender types will be reviewed. The value of behaviour modification and counselling programs within prisons will be examined.

Prerequisite: Psychology 49.210* or 49.260*.

Psychology 49.343*

Addiction

A critical review of social-psychological theories and research on the acquisition and maintenance of addictive behaviour. The rationale and outcome of treatment programs for the abuse of alcohol, tobacco, the opiates and the amphetamines.

Prerequisites: Two full credits in Psychology including Psychology 49.100.

Psychology 49.345*, 49.346*

Community Psychology (Honours Seminar)

A survey of the major theoretical, methodological and research efforts in community psychology. Major themes will include: the analysis of human-social problems with reference to the social context within which behaviour problems are generated, maintained and labeled as problems; and a commitment to systematic assessment and conceptualization, intervention and research/evaluation. Problems of program administration will be considered with reference to the realities of formal and informal decision-making procedures within organizations.

Prerequisite: Usually open to Third and Fourth year students in Psychology.

Note: The first half course is a prerequisite for the second. Generally, the two parts must be taken in the same academic year to meet the Honours requirement.

Psychology 49.362*

Transpersonal Psychology

This course represents the viewpoint that the scientific study of direct experience can provide valuable knowledge concerning the Nature of Human Consciousness. Concern is also directed towards understanding techniques for altering Consciousness and to the systems of thought which make the experiences meaningful.

Prerequisite: Psychology 49.200* or 300* or three full credits in Psychology.

Limited enrolment.

Psychology 49.391*, 49.393*

Practicum in Community Psychology

These courses supplement the theoretical and research orientation of the classroom with supervised field work. Emphasis is equally on gaining applied experience and on active and detailed study of community settings such as correctional institutions and centres for treatment

and management of the retarded and the elderly. Readings, discussions, and reports will be integrated with the program in the different settings. Research efforts will be encouraged.

Prerequisite: Open to Third and Fourth year students in Psychology with permission.

Note: The first half course is a prerequisite for the second. For placement reasons, pre-registration in this course is strongly recommended.

Schedule to be arranged.

Religion

Officers of Instruction

Co-ordinator

J.G. Ramisch

Professor

D. Chung

Associate Professor

J.P. Dourley

Assistant Professor

J. Ramisch

Major Programs

Students majoring in Religion are required to take six courses: one course from the Hebrew/Christian Scriptures, two courses (in different religious traditions) from the History of Religions, and one course from the Theological/Philosophical area, plus two additional courses. One of these six courses must be at the 300 level or above. Courses should be selected in consultation with the Departmental Majors Adviser.

Combined Major Programs

A Major combining Religion with another subject must take at least four courses in Religion. Courses should be selected in consultation with the Departmental Majors Adviser.

Courses Offered

Religion 34.100

Introduction to World Religions

A survey of Eastern religions: Hinduism, Buddhism, Taoism, Confucianism, and Shinto. A survey of Western religions: Zoroastrianism and Islam. Special attention will be paid to the theological and philosophical teachings of these religions.

Day division: Lectures three hours a week.

D. Chung

Religion 34.120

Introduction to the Bible

An introduction to the critical study of the Jewish and Christian scriptures examined not simply as literature but as the historical record of the religious faith of these people. Biblical texts are studied from the point of view of history and literary form, with selected representative works investigated in more detail. Emphasis is divided between the Bible texts themselves and modern critical studies of them.

Day division: Lectures and discussion three hours a week.

J. Ramisch

Religion 34.203**Religion and Art in India, China and Japan**

A study of art as an expression of religious ideas and attitudes in India, China and Japan. Slides and films will be used to illustrate the relationship between religion and art in the Hindu and Buddhist traditions of India and in Chinese, Buddhist, Taoist and Zen traditions. Some of the themes of the course are: religious expression in pre-historic art; myth and symbol in art forms; motifs underlying temple architecture and sculpture; the relationship between religious ideas and theories of art, iconography and the place of art in religious practices. Prerequisite: Religion 34.100 or permission of the instructors.

Day division: Lectures three hours a week.

D. Chung

Religion 34.206**Religions and Philosophies of East Asia**

A study of the history and thought of Confucianism, Taoism, Buddhism in China and Japan, Shintoism and Shamanism with intensive readings in their classical and contemporary literature (in translation).

Prerequisite: Religion 34.100 or permission of the Department.

D. Chung

Religion 34.270**The Development of Christian Thought**

The historical and cultural development of selected aspects of Christian thought from its origins to the modern period. Problems considered are the early shift from a semitic to a hellenistic culture; the beginnings of the church as an institution; the development of thinking about Jesus in the early councils; conciliarism and other theories on the nature of the church; medieval efforts at reform; issues in the Protestant Reformation and its aftermath. Analysis of the way change and development has taken place in Christianity will also be included.

Day division: Two hours a week.

J. Ramisch

Religion 34.306 (34.305)**Models of God and Man in the Thought of Paul Tillich, Teilhard de Chardin, and C.G. Jung**

The course will focus upon a common problematic central to these modern thinkers with backgrounds in theology, science and psychology, namely, the nature of God's presence to and activity in nature and life. The course will expose the concerns and pressures operative in their formulation of the question of God and with the similarities and disparities of their responses. Special attention will be given to their models of the relationship of divine immanence and transcendence and to the consequent shape of the major Christian symbols within these models. Related background courses: Religion 34.130, 34.200, 34.265, 34.280, 34.300.

Not offered 1977-78.

Science**Officer of Instruction**

Professor

F.E. Banim

Courses Offered**Science 00.200****Physical Anthropology (Introduction to the Study of Prehistoric Man)**

A course for undergraduates desirous of learning something of what science has to say concerning the history of man. No previous formal training in biology is necessary. Definition and divisions of anthropology; physical anthropology; history, prehistory, and the nature of an historical document; historical introduction to human paleontology; geological time; absolute, relative and conjectural chronology; the evolution of exact chronology; modern techniques. The biological definition of man; relevant comparative anatomy of modern man, the modern anthropoid, and known fossil man. The Australopithecus problem. The Pithecanthropus-Sinanthropus-Atlanthropus group. Heidelberg, Neanderthal, and Cro-Magnon man. The Palestine Group. The relevance of the theory of evolution in the comparative anatomy of these groups. The Teilhard de Chardin synthesis. Prehistoric sites; their occurrence, study, and interpretation. Artifacts of fossil man, their nature, classification, and chronology. Prehistoric painting and sculpture. In lieu of essays and term papers students are required to submit a review of each of sixteen texts chosen from the list below. An announcement concerning (a) the spacing of the reviews and, (b) which of them are compulsory, will be made in class. This course is available as an option to Second- and Third-year students only.

Texts: Leakey, *Adam's Ancestors*; Brace, *The Stages of Human Evolution*; Ardrey, *African Genesis*; LeGros Clark, *Antecedents of Man*; *History of the Primates*; Kroeber, *Anthropology*; *Biology and Race*; Wendt, *In Search of Adam*; Oakley, *Man the Toolmaker*; Burkitt, *Old Stone Age*; Darwin, *Origin of Species*; McKern, Editor, *Readings in Physical Anthropology*; Teilhard de Chardin, *The Phenomenon of Man*; Dart, *Adventures With The Missing Link*; Howells, *Evolution of the Genus Homo*; Braidwood, *Prehistoric Men*; Pfeiffer, *The Emergence of Man*; Pilbeam, *The Evolution of Man*; Pilbeam, *The Ascent of Man*; Napier, *The Roots of Mankind*; Van-Lawick Goodall, *In the Shadow of Man*; Brothwell, *Digging up Bones*; Heizer, *Man's Discovery of His Past*; Vance Goodall, Editor, *The Quest for Man*. Day division: Two lectures and one laboratory period a week.

F. Banim

Sociology

Officers of Instruction

Co-ordinator

C. Steffens

Professor

G. Irving

Associate Professor

F.K. Hatt

Assistant Professors

C. Farmer

F. Hughes

B.D. Johnson

C. Steffens

J.A. Vantour

Sessional Lecturers

J. Hatt

W. Outerbridge

General Information

The program in sociology at St. Patrick's College is designed both to provide the student with a broad understanding of the discipline and the opportunity to concentrate on certain applied and policy-oriented aspects and fields of sociological interest. In addition to the courses listed below, which form a regular part of the College program, the Department of Sociology and Anthropology will, in any given year, offer other courses or course sections at the College. If these are not known by the time the Calendar is published they will appear in the College timetable. These courses, as well as others given on the main campus, may be included in the student's program, so long as the core requirements, outlined below, of the College Major in Sociology are met.

Major Programs

Major in Sociology

Course Requirements:

At least six full courses in Sociology including 08.100 or 08.110, 08.206, and two of 08.301*, 08.306* and 08.307*.

Combined Major Programs

Course Requirements:

At least four full courses in Sociology including 08.100, or 08.110, and 08.206.

Honours Programs

Students who are considering an Honours program in Sociology are referred to p. 384, where the requirements for this program are detailed. Students who wish to register in the Honours program must have their

individual programs approved by the main-campus Honours Co-ordinator or a member of the Honours Committee.

Courses Offered

Sociology 08.100

Principles of Sociology

Study of basic concepts and principles of social behaviour and social structure with emphasis on social groups, social backgrounds of personality, "culture", and the organization and institutional structure of contemporary society.

Day and Evening divisions: Lectures three hours a week.

Sociology 08.110

Principles of Anthropology

An introduction to basic concepts of anthropology and its areas of study: physical anthropology, man as an organism, evolution and race; archeology, prehistory and the beginnings of history; ethnology, social anthropology and linguistics, present and recent societies of the world, their languages and cultures.

Evening division: Lectures three hours a week.

Sociology 08.206

Principles of Sociological Theory and Methodology

An introduction to sociological theory and research emphasizing the intimate connection between the two. Research questions of general interest to sociologists will be considered in the context of two current theoretical perspectives, functionalism and conflict theory. Students will be introduced to the means whereby sociologists organize concepts, construct theories and test truth claims through empirical study. Prerequisite: Sociology 08.100, 08.110 or equivalent or permission of the instructor.

Evening division: Lectures three hours a week.

Sociology 08.255

Sociology of Deviance

A study of the theories and research on the nature, types and processes of deviant behaviour in relation to contemporary society and its institutions. Emphasis will be given to the problems of particular forms of deviant behaviour.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.

Day and Evening divisions: Lectures three hours a week.

Sociology 08.260*

Community

The community is studied as a localized social system in a larger social setting. This involves analysis of demographic and ecological factors as well as a variety of community based institutions. Special attention is given to decision making, community planning and development.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.
Lectures three hours a week.

Sociology 08.270

Criminology

The study of criminal behaviour in modern society with special emphasis on interdisciplinary theories of causation, the relationship of crime and the social structure, and policies and programs by which society reacts to crime.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.

Day and Evening divisions: Lectures three hours a week.

Sociology 08.301*

Contemporary Sociological Theory

Concepts and frames of reference currently used in sociology will be examined. Attention will be given to the development of approaches such as neo-positivism, symbolic interactionism, structural functionalism and exchange theory. Problems of theory construction and the relationship between theory and research will be considered.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.

Day division: Lectures three hours a week.

Sociology 08.306*

The Sociological Tradition

The historical development of social thought and the emergence of sociological theory will be presented. Particular attention will be given to the works of such pioneers as Marx, Durkheim, Simmel and Weber.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.

Day division: Lectures three hours a week.

Sociology 08.307*

Methods of Social Research

Study of the methods of empirical research in sociology with emphasis on research design, sampling, interviewing, analytic techniques and statistical procedures used in social research.

Prerequisite: Sociology 08.100, 08.110 or equivalent, or permission of the instructor.

Lectures three hours a week.

Sociology 08.373*

Correctional Policy

A description of Canadian correctional administration including prison, parole and probation with an emphasis on conflicting ideologies and the dynamics of policy-making decisions. Consideration will be given to the relationship between correctional policy and other aspects of the changing society.

Prerequisite: Sociology 08.255 or 08.270, or permission of the instructor.

Day division, First and Second terms: Lectures three hours a week.

Sociology 08.375*

Medical Sociology

A study of social factors related to health and illness, the illness role, relationships between patients and health practitioners, and the organization of health services. Attention will be given to both the social psychology of health and illness and the structure of organizations concerned with health care.

Prerequisite: Sociology 08.100 or 08.110 or equivalent, or permission of the instructor.

Evening division, First term: Lectures three hours a week.

Sociology 08.377*

Sociology of Welfare Institutions

Study of the emergence and position of welfare institutions in contemporary society with special emphasis on its relationship to social change, ideological conflicts and forms of organization.

Prerequisite: Sociology 08.100 or 08.110 or equivalent, or permission of the instructor.

Lectures three hours a week.

Sociology 08.380

Social Policy

A study of social policy in relation to social change and issues in Canadian society. This involves the policy orientation and role of the social sciences, especially sociology, in assessing the sociocultural background, the processes and the consequences of social policy. Contemporary Canadian issues will be considered as case studies in social policy.

Prerequisites: Introductory Sociology or Anthropology, and at least one additional full Second- or Third-year course in Sociology, or equivalent courses in related disciplines, or permission of the instructor.

Evening division: Lectures, seminars and discussion groups three hours a week.

Sociology 08.388*

An Examination of Current Issues in Criminal Justice

A seminar focusing on conflicting goals among components of the criminal justice system, the theory and practice of correctional institutions and their alternatives, and offenders' rights.

Prerequisite: Sociology 08.100, 08.110 or equivalent, and Third-year standing, or permission of the instructor.

Day division.

Sociology 08.390*

Independent Studies in Sociology

A course designed to permit an individual student to pursue special topics or projects under the guidance of a faculty adviser.

Prerequisite: Permission of the Department.

Spanish

Officers of Instruction

Co-ordinator

A. Lozano

Associate Professor

A.W. Urrello

Assistant Professor

A. Lozano

General Information

Courses are designed primarily to equip students with a working knowledge of Spanish, both written and oral, that will allow them to express themselves in this language and to continue further studies of Hispanic literature and culture.

Major Programs

Requirements for Major:

Spanish 38.100 or equivalent, and five further courses in Spanish including 38.210, 38.320, 38.330 and 38.350.

Requirements for Combined Major:

Spanish 38.100 or equivalent, and four further courses in Spanish to include Spanish 38.210, and two literature courses at the 300 level.

Honours Programs

Students who contemplate entering the Honours Program in the Department of Spanish, Faculty of Arts, are advised to contact a member of the Department before registering for their Second year.

Intensive Spanish Program

See p. 217.

Courses Offered

Spanish 38.015

Elementary Spanish

Fundamentals of grammar with emphasis on conversation, reading and composition.

Texts: Turk, *Foundation Course in Spanish (Grammar and Tape Manual)*; summer reading is recommended. Offered in Intensive Spanish Program, First term and Evening division.

Spanish 38.100

Intermediate Spanish

Grammar review, conversation, reading and composition. Students coming from Spanish 38.015 are advised to complete certain summer readings.

Prerequisite: Spanish 38.015 or equivalent. Summer reading will be assigned on an individual basis depending upon the future interests of the students.

Offered in Intensive Spanish Program in First term and Evening division.

Spanish 38.201*

Spanish Conversation

Conversation in Spanish on selected topics. Occasional laboratory sessions.

Prerequisite: Spanish 38.100 or equivalent.

Offered as part of the Intensive Spanish Program and in the Evening division, First term only.

Spanish 38.202*

Spanish Composition

A course designed to consolidate the linguistic knowledge attained in Spanish 38.100 and to inculcate the elements of good Spanish style.

Prerequisite: Spanish 38.100 or equivalent.

Offered in the Evening division and as part of the Intensive Spanish Program in the Second term.

Spanish 38.210

Hispanic Civilization

An introduction to the culture and civilization of Spain and Spanish America, including readings from their literature.

Prerequisite: Spanish 38.100 or equivalent, or permission of the Department.

Offered in the Faculty of Arts, and as part of Intensive Spanish Program, Second term.

Spanish 38.320

The Golden Age

A close study of the major works of this period.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department.

Offered in the Faculty of Arts.

Spanish 38.330

Modern Spanish Literature

A study of the most important authors of the nineteenth and twentieth centuries through their main works.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department.

Offered in the Faculty of Arts.

Spanish 38.350

Survey of Spanish American Literature

The evolution of Spanish American Literature through the study of representative literary works of all types from most Spanish American countries from independence to the present.

Prerequisite: One of Spanish 38.210, 38.235 or 38.251, or permission of the Department.

Offered in the Faculty of Arts.

Faculty of Science

Officers of the Faculty

Dean
J.L. Wolfson

Secretary of the Faculty
P.M. Laughton

Departmental Chairmen
Biology, J.M. Neelin
Chemistry, C.H. Amberg
Geology, J.M. Moore
Mathematics, L.D. Nel
Physics, M.K. Sundaresan

Chairman of the Integrated Science Studies Committee
S.B. Peck

Chairmen of Interdepartmental Committees
Biochemistry, K.W. Joy
Biology and Geology, H.F. Howden
Chemistry and Geology, G.B. Skippen
Geology and Physics, G. Ranalli
Mathematics and Physics, M.K. Sundaresan

Chairman of the Committee on Admission and Studies
F.K. North

Faculty Registrar
B.R. Lifeso

Administrative Officer of the Science Workshops
A.A. Raffler

General Information

The Faculty of Science includes the departments of Biology, Chemistry, Geology, Mathematics and Physics and provides course programs leading to the degrees of Bachelor of Science, Bachelor of Science in Integrated Science Studies and Bachelor of Science with Honours.

The Science degree program is designed to provide specialization in one field of study called the Major field while permitting the candidate to select other courses from complementary fields or disciplines in which he has a particular interest. The Major fields include Biology, Chemistry, Geology, Mathematical Sciences, Mathematics and Physics, and the corresponding programs are detailed in the departmental sections of the calendar.

For information about the Integrated Science Studies degree program see p.275.

The Science degree program with Honours is designed for those students who wish to deepen and extend their studies in one particular field or area for the purpose of preparing themselves for graduate studies, or for

entrance to the Specialists' Certificate of the Ontario College of Education or other fields of scientific endeavour. Honours may be taken in Biochemistry, Biology, Chemistry, Geology, Integrated Science Studies, Mathematical Sciences, Mathematics, Physical Geography, Physics and Psychology. Combined Honours may be taken in Biology and Geology, Chemistry and Geology, Computing Science and Mathematical Sciences, Geology and Physics, and in Mathematics and Physics. The detailed programs are given in the appropriate departmental sections of the calendar. The Honours program of each student is under the direct supervision of an Honours adviser of the student's department.

Accelerated Progress

Any students registered in Qualifying University year who successfully complete two years or ten courses at the University with a B- or 70% average may have their programs assessed for the purpose of reducing the number of courses required to graduate. This reduction may be made for any student registered in the Faculty of Science who satisfies the promotion requirements for First year Science within one academic year after admission to Qualifying University year Science with a grade-point average of not less than 7.0 (B-) over courses taken and the recommendation of a Major department or interdepartmental program committee.

Admission Requirements

Qualifying University Year in Science

The Ontario Secondary School Graduation Diploma. A 70% average must be presented on a minimum of 10 Advanced or Enriched Phase credits at Levels 3 and 4, including an appropriate preparation in Chemistry, Physics and Level 4 Mathematics.

Bachelor of Science, Major Program

First Year

1. The successful completion of five courses approved for a Qualifying University year Science program with an average of C- or better in the courses in Mathematics and at least two experimental Sciences; or
2. The Ontario Secondary School Honour Graduation Diploma with a minimum 60% average and including Functions, Calculus and two experimental Sciences. Prospective students should note that, while only a 60% general average is required for admission, they should have at least 60% or third class honours in the mathematics and science subjects offered. Applicants from outside the province of Ontario must present acceptable equivalent certificates generally required for admission to universities in their own provinces or countries.

Advanced Standing

1. To be admitted to Second year a student must have completed the equivalent of the First year Science program with the required academic standing.
2. Applications for admission to the Third or subsequent years will be evaluated on their merits and advanced standing granted for studies undertaken elsewhere when these are recognized as the equivalent of subjects offered at Carleton University. Work taken in the Faculty of Engineering may be counted toward a degree in Science should the student wish to transfer from the Faculty of Engineering at the end of the First or Second year.
3. Students not admitted to a degree program but taking courses at Carleton University as special students may, on transfer to a Science degree program, receive credits for not more than seven courses, five of which must meet the First year promotion requirements.

Bachelor of Science Honours Program

1. (a) A new student desiring admission to Honours in Science should so indicate on the application for admission to undergraduate studies. The student may indicate the Honours program desired, in which case the application will be forwarded by the Registrar to the appropriate department or committee for approval. A student who does not wish to indicate the particular program may be admitted to First year Honours Science. Any such student must elect a particular Honours program before entering Second year. (b) An "in course" student wishing to enter an Honours program must apply to the chairman of the appropriate department or committee.
2. For entry to the First year of an Honours program a student must have an average of 65% or better in the subjects of Grade 13, as listed under the admission requirements for the Major program, or have a grade-point average of 4.0 or better in the course of Qualifying University year and the recommendation of the Honours department or committee. Students presenting credits for one or more repeated subjects or courses may not be admitted directly into an Honours Program except on the recommendation of the department or committee concerned.
3. For entry to an Honours program after the completion of First year, a student must have a grade-point average of 6.0 or better in the Honours subject(s), an overall grade-point average of 4.0 or better and the recommendation of the Honours department or committee.
4. For continuance in an Honours program the student must maintain a grade-point average of 6.0 or better in the Honours subject(s), an overall grade-point average of 4.0 or better and be recommended by the Honours department or committee. At the beginning of his or her last five courses the student must have (a) a grade-point average of 6.0 or better in the Honours courses (b) an overall grade-point average of 4.0 or better (c) a grade of C- or better in at least half of the

courses to be credited toward his or her degree (d) the recommendation of his or her Honours department or committee. Otherwise the student may not remain in Honours.

5. Students applying for admission to Honours in Science at Carleton after having obtained a degree from Carleton or another university shall meet the same criteria as specified in 2 to 4.
6. No student may be admitted to Honours in Science without satisfying the requirements for entry to the corresponding Major program.
7. While the consent of the department or committee concerned is necessary for entry to an Honours program, the department cannot establish a standard of entrance based on a grade-point average which is higher than that established by the Faculty as set out in the foregoing paragraphs. Students who consider that they meet the requirements for entry to an Honours program but who have not been accepted by any department may appeal to the Science Committee on Admission and Studies for review of the case. The Committee will report to the Science Faculty Board on all such appeals. It should be noted, however, that departmental capacities to accept all qualified Honours candidates may be limited by physical resources.
8. Students in the final year of a Major degree program wishing to be considered for entry to an Honours program must apply to the Major department to have their names withdrawn from the graduation list before March 1 of that year. If subsequently the student is not accepted for an Honours program, the student's name will be returned to the graduation list.

Course Requirements

Qualifying University Year in Science

A Qualifying University year is offered which is the equivalent of Ontario Grade 13 (Senior Matriculation). The program consists of the following five courses:

1. Mathematics 69.006* and 69.007*;
2. Two courses selected from Chemistry 65.010, Physics 75.010, Biology 61.101, Geology 67.100;
3. Two other courses selected from any of the foregoing subjects not already presented and from other courses approved for a Qualifying University year Science program as follows:
Science: Biology 61.101, Chemistry 65.010, Geology 67.100, Physics 75.010.
Arts or Social Sciences: English 18.010, French 20.001 or 20.011, German 22.015 or 22.016 or 22.017, Greek 15.015, History 24.014, Italian 26.015, Latin 16.015, Music 30.050, 30.100 or 30.160, Portuguese 38.016, Russian 36.015, Spanish 38.015, or any Arts or Social Sciences course approved for First year Science students for which the student has the required prerequisite. (See p. 247.)

Note:

Normally, a student admitted to degree studies in the Faculty of Science with deficiencies in meeting the admission requirements for First year (see p. 245), will be subject to the promotion regulations governing Qualifying University year students. (See p. 245.) However, students whose selection of courses satisfy the requirements of the First year Science program (see below), may be subject to the promotion regulations governing First year students.

First Year

The First year program leading to the degree of Bachelor of Science consists of five courses approved for a First year Science program including (a) Mathematics (b) an experimental Science course chosen from Biology, Chemistry, Geology, Physics (c) two additional courses chosen from Science, Mathematics, Arts, Social Sciences or Computing Science (except 95.101*).

In establishing their First year program of courses, students should consult with the chairman of their Major department, the chairman of the Integrated Science Studies Committee, or the chairman of the appropriate interdepartmental committee. Students who have not yet selected a Major field should select those First year courses which will give them a wide choice of fields for the Second year. Dependent on the field, the five courses of First year should include the following:

1. *Biochemistry*: Biology 61.100, or 61.101, Chemistry 65.100, Mathematics 69.107* and 69.117*, Physics 75.100.

2. *Biology*: Biology 61.100 or 61.101, Chemistry 65.100, Mathematics 69.107* and 69.117* or 69.127*, or Mathematics 69.102 and 69.112;

3. *Chemistry*: Chemistry 65.100, Physics 75.100, and either (a) Mathematics 69.107* and 69.117*, and one of Biology 61.100 or 61.101 or Geology 67.100 or (b) Mathematics 69.102 and 69.112;

4. *Geology*: Chemistry 65.100, Geology 67.100, Mathematics 69.107*, and 69.117* or 69.127*, and one of Biology 61.100 or 61.101, Physics 75.100 or 75.105;

5. *Mathematics*: Mathematics 69.102 and 69.112;

6. *Physics*: Chemistry 65.100, Mathematics 69.107* and 69.117*, or Mathematics 69.102 and 69.112, Physics 75.100. If Mathematics 69.107* and 69.117* are taken, one of Biology 61.100 or 61.101, or Geology 67.100 is also required;

7. *Physical Geography*: Mathematics 69.107* and 69.117*, Chemistry 65.100, Geology 67.100, and one of Biology 61.100 or 61.101, or Geography 45.210, or Physics 75.100. An Arts or Social Science elective (may not be Geography 45.101 if 45.210 is selected in above);

8. *Psychology*: Mathematics 69.107*, and 69.117* or 69.127*, and one of Biology 61.100 or 61.101, Chemistry 65.100, Physics 75.100 or 75.105. Psychol-

ogy 49.100 should be taken as the Social Science elective.

Courses Approved for A First Year Science Program**Science Courses***Biology*

61.100 General Biology

61.101 Introductory General Biology; or if one of these courses has been completed in Qualifying University year, one of:

61.200 Form and Diversity

61.215 Genetics

Chemistry

65.010 Introductory Chemistry

65.100 General Chemistry, or if this course has been completed prior to First year, with permission:

65.210 Introductory Physical Chemistry

65.220 Elementary Organic Chemistry

65.222 Introductory Organic Chemistry

65.250 Elementary Inorganic and Analytical Chemistry

Geography

45.210 Physical Geography

Geology

67.100 General Geology

67.111* Geology, the Environment and Man I

67.112* Geology, the Environment and Man II

67.204* Earth, Resources and Society

If one full course equivalent from Geology 67.100, 67.111*, and 67.112* has been completed in Qualifying University year, two of:

67.221* Crystallography and Optical Mineralogy

67.222* Mineralogy

67.228* Petrology I

67.233* Stratigraphy I

67.234* Palaeontology I

67.281* Field Geology I

Mathematics

69.106* Pre-Calculus Mathematics

69.107* Elementary Calculus

69.117* Elementary Algebra

69.127* Topics in Calculus and Algebra

69.102 Calculus

69.112 Algebra

69.207* Elementary Calculus II

69.217* Linear Algebra

69.257* Introduction to Statistics

or any Mathematics course for which the student has the prerequisite.

Physics

- 75.010 Pre-University Physics
 75.100 Introductory Physics
 75.105 Introductory Physics for Non-Majors; or if one of 75.100 or 75.105 has been completed prior to First year, with permission
 75.230 Electricity and Magnetism; or any two of:
 75.211* Mechanics and Properties of Matter
 75.222* Wave Motion and Optics
 75.231* Electricity and Magnetism
 75.242* Heat and Thermodynamics

Arts and Social Science Courses

Any course available to a First year Arts or Social Science student as listed on pp. 60-62 and 318-319 with the exception of (a) Accounting 41.100, 41.101*, or 41.102* (b) Geography 45.210 (c) Computing Science 95.101* and (d) any course offered by the departments in the Faculty of Science. Advanced courses in certain disciplines may be included if the prerequisite has been completed prior to First year.

Courses for Subsequent Years**Major Program**

Candidates will ordinarily take at least ten courses beyond the completion of First year (a) at least four more courses in the Major subject (b) at least two Science courses above the First year level in a department or departments other than the Major department (c) sufficient electives to meet the program requirement of two Arts or Social Science electives and one free option.

The program of each student is under the direct supervision of a full-time member of the department in which the student takes his or her Major. In several departments most of the more advanced courses will be given, in whole or in part, during the day only. Candidates are advised to consult their Major departments as early as possible to arrange their programs.

Candidates wishing to change their Major field of study may do so only with the approval of both departments concerned.

Integrated Science Studies Program

For course requirements see p. 275.

Honours Program

Students for a degree with Honours will ordinarily take at least 15 courses beyond the completion of First year. (See note p. 28 regarding transfers to the Faculty of Science from other institutions or faculties.) With the permission of the department or Committee concerned, it is possible for a candidate of exceptional ability to complete an Honours program in certain fields in three years from Senior Matriculation by taking six courses in each winter session and one in each of the summers.

The course patterns for each Honours program are detailed individually and requirements lie within the discretion of the appropriate department or committee. The student should therefore read the appropriate calendar instructions and consult the chairman of the appropriate department or committee. Capacities for Honours students will depend on departmental resources and the nature of the program.

Regulations governing honours essays, theses or special projects are detailed in the departmental sections of this calendar.

A student who fails to maintain Honours standing may not remain in Honours, and must discuss a new program with the Chairman of the department.

Science Continuation Courses

1. All courses offered in the Science Faculty beyond First year except Geology 67.204*.

2. All courses offered in Computing Science except 95.101*. Students in the Faculty of Science taking Computing Science 95.102*, 95.103*, or 95.104* should register for these courses under the following course numbers: 95.102* as 60.202*, 95.103* as 60.200*, and 95.104* as 60.206*.

Technology, Society, Environment (TSE) 59.301, 59.302.

Geography 45.201*, 45.210, 45.299*, 45.303*, 45.308, 45.312, 45.325, 45.345, 45.402*, 45.411*, 45.412*, 45.413*, 45.414*, 45.415*, 45.416*, 45.417*, 45.418*, 45.424*.

Psychology 49.200*, 49.201*, 49.204*, 49.205*, 49.220*, 49.221*, 49.222*, 49.251*, 49.252*, 49.255*, 49.256*, 49.270*, 49.271*, 49.305, 49.321*, 49.325, 49.327*, 49.330*, 49.331*, 49.332*, 49.355*, 49.356*, 49.375*, 49.376*, 49.380*.

3. All courses offered in the Faculty of Engineering beyond First year subject to the approval of the Faculty of Engineering.

Notes:

1. Computing Science 95.101* is not acceptable for credit in the Science Faculty.

2. The following courses are acceptable only as free options for Science students: Biology 61.190, Chemistry 65.106, Geology 67.204*, Mathematics 69.141*, Mathematics 69.142*, Physics 75.120, Physics 75.190, Physics 75.195, Science 60.100.

3. All Science Continuation Courses taken outside the Major department must be approved by the student's Major department or committee.

4. Courses counted in the Science sequence of the Integrated Science Studies Program will be determined and approved by the Integrated Science Studies Committee.

Social Science Courses not Acceptable as Social Science Electives

Accounting

All courses.

Economics

43.220, 43.404*, 43.405*.

Geography

45.201*, 45.210, 45.299*, 45.303*, 45.308, 45.312, 45.325, 45.345, 45.402*, 45.411*, (Geology 67.415*), 45.412*, 45.413*, 45.414*, 45.415*, 45.416* (Geology 67.418*), 45.417*, 45.418*, 45.424* (Engineering 82.424*, Geology 67.417*).

Psychology

49.200*, 49.201*, 49.204*, 49.205*, 49.220*, 49.221*, 49.222*, 49.251*, 49.252*, 49.255*, 49.256*, 49.270*, 49.271*, 49.305, 49.321*, 49.325, 49.327*, 49.330*, 49.331*, 49.332*, 49.355*, 49.356*, 49.375*, 49.376*, 49.380*.

Sociology

53.370.

Academic Standing

Grading System

Standing in courses will be determined by departments and will be shown by alphabetical grades.

The grades used with their corresponding grade points are as follows:

| | |
|-------|------|
| A+ 12 | B+ 9 |
| A 11 | B 8 |
| A- 10 | B- 7 |
| C+ 6 | D+ 3 |
| C 5 | D 2 |
| C- 4 | D- 1 |

Standings to represent special circumstances are as follows:

E

Interpreted as 40 to 49 per cent, or a grade which may be raised to a D- if the student's grades in all other courses taken in the academic session were satisfactory. Applicable only to First year Science students in courses approved for a First year Science program. (See p. 247.) For a First year Science student taking five courses in a winter session, a grade of E becomes a D- if the student has passed all but one of his or her courses with at least 2 grades of C- or better and total grade points of 16 or more, otherwise an E becomes an F.

Aeg

Pass standing granted although absent from final examinations. Aegrotat standing is granted only by the Science Committee on Admission and Studies in response to a student's application which meets the stipulations for examinations.

F

Failure. No academic credit.

FNS

Failure, but with supplemental privileges withdrawn because of incomplete term work or an unacceptably low mark in the examination. No academic credit.

Wdn

Withdrawn in good standing. No academic credit.

Abs

Failure due to absence from the final examination where the necessary term work has been completed; or withdrawal after the published deadline. Supplemental privileges withdrawn. No academic credit.

Def

Students who are absent from final examinations or who are unable to complete their course work for medical or compassionate reasons may apply to the Science Committee on Admission and Studies for deferred examination privileges.

IP

In Progress.

Course Load

The normal course load for a full-time student in the Faculty of Science, during the winter session, is the equivalent of five full courses. The normal course load for a part-time student, in the winter session, is the equivalent of two full courses.

Students may register for a maximum of two courses in the summer session, i.e. two Evening courses, or one Evening and one Day course, or two Day courses.

A student may exceed the normal course load only with the Registrar's permission, which may be granted if a C average is maintained overall and in the Major field, and if recommended by the Major department. Part-time students may be granted permission if a C average is obtained in a minimum of two courses in the previous session.

Promotion and Failure

Full-time Students

To be promoted to the Credit System from First year, a full-time Science student must have passed five approved courses and attained a grade of C- or better in at least two of these courses.

For a student without advanced standing in any First year courses, these five courses must be selected from those approved for a First year Science program.

For a student (not repeating First year) with advanced standing in some First year courses, these five courses must include sufficient courses to complete the First year Science program; the remainder of the five courses may include courses beyond the First year provided the student has retained credit for the prerequisite First year courses. In the Major program one of the grades of C- or better must be in the intended Major subject. In the Integrated Science Studies program, the student must have attained a grade of C- or better in one course from each of the Science and non-Science sequences.

This must be accomplished in one calendar year with not more than one summer course, supplemental or special supplemental examination. The course work of those First year Science students who almost meet promotion requirements is reviewed by the Dean's Committee on Promotion.

A full-time student who does not meet the requirements of promotion by the end of August examinations will have failed First year.

Part-time Students

To be promoted to the Credit System from First year, a part-time student must, in the first six [final] examinations, have passed five courses approved for a First year Science program and attained a grade of C- or better in at least two of these courses.

In the Major program one of the grades of C- or better must be in the intended Major subject. In the Integrated Science Studies program, the student must have obtained a grade of C- or better in one course from each of the Science and non-Science sequences.

All Degree Students

A failed student may repeat First year without encumbrances, retaining credit toward his or her degree (but not toward the completion of First year) for the following courses: (a) those graded C- or better if more than two courses were passed; or (b) those graded B- or better if only one or two courses were passed.

A student who fails First year a second time, may not courses approved for a First year Science program, but may include one course beyond the First year provided the student has retained credit for the prerequisite First year course(s).

A student who fails First year a second time may not re-enter a degree program in the Faculty of Science.

After promotion to the Credit System the student will accumulate course credits under a pattern approved by the appropriate department or committee.

Supplemental Examination Privileges

First year full-time students may write one supplemental or special supplemental examination provided that success in this examination will complete the First year program.

First year part-time students may write one supplemental or special supplemental examination in the first five courses of their program credited towards the degree.

Major degree students have the privilege of writing supplemental or special supplemental examinations, or repeating or replacing courses, subject to the following restriction: After admission to the credit system, the ratio of total number of (full course equivalent) examinations to the total number of credits required may not exceed three to two. In particular, a student who requires ten more credits has the equivalent of at most fifteen full course examinations available to complete his or her program.

Honours degree students have the privilege of writing supplemental or special supplemental examinations, or repeating or replacing courses subject to the following restriction: After admission to the credit system, the ratio of total number of (full course equivalent) examinations to the total number of credits required may not exceed six to five. In particular, a student who requires fifteen more credits has the equivalent of at most eighteen full course examinations available to complete the program.

The number of examinations available to a student who transfers from another institution or from another program, will be determined on a *pro rata* basis and will be specified at the time of admission.

When a student is examined in a course which previously has been declared extra to the degree program, this examination does not affect the remaining number of available examinations.

Students who cannot complete their program without exceeding the available number of examinations lose their undergraduate status in the Faculty of Science.

Graduation

General Regulations

1. Every student will be required to complete at least the last five courses at Carleton;
2. A student who takes courses elsewhere with a letter of permission from the Science Committee on Admission and Studies may, with the approval of the appropriate department or committee, use the grades to meet graduation requirements;
3. Students who transfer to the Faculty of Science from another institution must include in the courses presented for degree (whether obtained at Carleton or elsewhere) at least:

- (a) two Arts or Social Science electives if on transfer they received credit for less than ten courses (or equivalent);
- (b) one Arts or Social Science elective if on transfer they received credit for ten or more courses.

Major Degree Students

To qualify for graduation a student must:

1. present credits for fifteen approved full courses (or equivalent) beyond Qualifying University year with not more than two courses below the 100 level (at least half of these credits must (a) be at the 200 level or higher, and (b) have a grade of C- or better);
2. have an average of C- or better in the courses in his or her Major subject or subjects;
3. after entry to the credit system, have completed the program with not more than three (full course equivalent) examinations for every two credits required. (Examinations include supplemental and special supplemental examinations, course repetitions and replacements.) A part-time student or a full-time student who has interrupted his or her studies must complete the program within seven years after entry to courses beyond First year;
4. include at least two courses in the Major subject or subjects in the last five courses taken for credit;
5. be recommended by the Major department(s) and the Science Faculty Board (see general regulation 3);

To meet the requirements for the C- average in the Major stated above, only those courses in the Major necessary to make up the required total for graduation in the Major department need be counted. All obligatory courses must be counted.

A graduating student in a Major program of the Faculty of Science will be designated as graduating "with distinction" if:

1. he or she has successfully completed the fifteen courses required for the degree without a course failure, supplemental examination, course repetition or replacement;
2. the ten courses taken beyond the First year requirements (a) were approved by the candidate's Department or Faculty and were completed while he or she was a registered student of Carleton University; (b) were graded by Carleton University either directly or by acceptance and translation of the grade from another academic institution (at least five of these courses must be taken at Carleton University); (c) were graded under the Carleton University system and the grade point total was at least 90 grade points.

Integrated Science Studies Degree Students

See p. 275.

Honours Degree Students

To qualify for graduation with a Bachelor of Science degree with Honours a student must:

1. present credits for at least twenty approved full courses (or equivalent) beyond Qualifying University year with not more than two courses below the 100 level and not more than seven below the 200 level;
2. meet the requirements of the Faculty of Science and of the appropriate department or committee both with respect to course and grade requirements;
3. after entry to the credit system, have completed the program with not more than six (full course equivalent) examinations for every five credits required. (Examinations include supplemental and special supplemental examinations, course repetitions and replacements.) A part-time student or a full-time student who has interrupted his or her studies must complete the program within seven years after entry to courses beyond First year;
4. include at least two courses in the Honours subject or subjects in the last five courses taken;
5. be recommended by the appropriate department or committee and the Science Faculty Board.

The Honours degree will not be awarded to students taking less than the equivalent of five full courses for credit at Carleton.

Classes of Honours Degrees

Three classes of Honours are awarded, determined on the basis of the grade-point average as follows:

First Class

- 9.0-12 in Honours subject, and
- 7.0 or better overall

High Second Class

- 8.0 or better in Honours subject, and
- 6.0 or better overall

Second Class

- 6.0 or better in Honours subject, and
- 4.0 or better overall

Departments may recommend the higher class of Honours degree in the case of a student one of whose indices is in the appropriate higher range and the other within 0.2 grade points of the higher range.

To determine the class of degree for students with Combined Honours, the average is taken in each of the two subjects and the simple average of the two is used. If agreeable to the committee concerned, the final average may be computed on the basis of the weighted average of the required number of Honours courses in the two subjects.

Departments may use discretion for establishing the class of degree in counting the number of Honours courses where students have more than the minimum number of courses.

Biochemistry

Members of the Committee

Chairman

K.W. Joy

Committee

K.W. Joy (*Biology*)

G. Setterfield (*Biology*)

C.S. Tsai (*Chemistry*)

D.C. Wigfield (*Chemistry*)

R.H. Wightman (*Chemistry*)

H. Yamazaki (*Biology*)

Honours Program

The Biochemistry program is administered by the Biochemistry Committee of the Faculty of Science comprising faculty members from the departments of Biology and Chemistry. A student interested in Biochemistry may obtain a basic training in this interdisciplinary subject in a four-year program leading to an Honours B.Sc. degree in Biochemistry. The program is based on several courses in Biology and Chemistry, since a sound knowledge of these disciplines is fundamental to an understanding of Biochemistry.

Admission and Course Requirements

Entry to the Biochemistry program will normally be into the Second year, and will be approved on satisfactory completion of the First year program in the Faculty of Science. Applicants must have at least C- grades in both Biology 61.100 (or 61.101) and Chemistry 65.100, and must comply with the general regulations for entrance into Honours degree programs in the Faculty of Science. Students interested in this program should select carefully their First year courses, in consultation with a member of the Biochemistry Committee. (See First year requirements p. 247.) Twenty course credits are required for the degree, to be taken in the following pattern approved by the Committee Chairman. It should be noted that certain courses in the program have acceptable equivalents which can also be approved by the Chairman.

1. Biology 61.100 or 61.101, 61.215, 61.325*, 61.335* and one of 61.417, 61.420, 61.425, 61.426*, 61.427*, 61.435 or 61.455.
2. Chemistry 65.100, 65.210, 65.220, 65.320, 65.301* or 65.325*.
3. Biochemistry 63.300, 63.401*, 63.402*.
4. Mathematics 69.107*, and 69.117*, Physics 75.100 and at least one of Mathematics 69.202 or Physics 75.230.
5. Two approved Arts or Social Science courses.
6. A research project Biochemistry 63.498.
7. Of the remaining three and one-half credits:

(a) not more than one credit from Chemistry 65.250, Biology 61.220*, 61.221*, 61.230*, 61.250*, Mathematics 69.250 or 69.258*, 69.202, Physics 75.230;

(b) at least one and one-half credits from Biochemistry 63.403*, Biology 61.417, 61.420 (or 61.423 or 61.424), 61.425, 61.426*, 61.427*, 61.435, 61.455, 61.491* (see note), Chemistry 65.310 or 65.311*, 65.350, 65.420*, 65.422*, 65.423*;

(c) up to one free option.

Note: Biology 61.491*: A brief outline of the proposed study, in an area related to Biochemistry, must be submitted to the Committee Chairman before registration, and permission of the Biology Chairman is also required.

Graduate Program

No graduate program is offered by this Committee but the graduate offerings of the Departments of Biology and Chemistry include projects and courses which may be appropriate for students with an interest in Biochemistry. Details will be found in the Graduate Studies and Research Calendar.

Courses Offered

Biochemistry 63.300

General Biochemistry

Chemistry and metabolism of proteins, lipids, carbohydrates and nucleic acids. Mechanism of action of enzymes and metabolic control mechanisms. Photosynthesis. Biological oxidation. Biosynthesis.

Prerequisites: Biology 61.220*, or Chemistry 65.210, and 65.222 or 65.220, or permission of the Biochemistry Committee.

Day division: Three lectures and four hours of laboratory work a week.

J. Neelin, C.S. Tsai

Biochemistry 63.401*

Methods in Biochemistry

The course will deal with the principles and applications of modern biochemical methodology, including use of radioisotope tracers, ultracentrifugation, electrophoresis and ion-exchange chromatography.

Prerequisite: Biochemistry 63.300.

Day division, First term: Lectures and discussion two hours, laboratory six hours a week.

H. Yamazaki

Biochemistry 63.402*

Biomacromolecules

Biochemistry of polysaccharides, proteins and nucleic acids. Discussion of experimental approaches to purification and conformational studies of biomacromolecules, their interaction in solutions, function and regulation of enzymes. Workshop sessions will include discussion of experimental design and interpretation, and solving of related numerical problems.

Prerequisite: Biochemistry 63.300.

Day division, Second term: Lectures two hours, workshop three hours a week.

C.S. Tsai

Biochemistry 63.403*

Metabolic Regulation

The course will include discussion of selected topics concerned with the regulation of intermediary metabolism.

Prerequisite: Biochemistry 63.300.

Day division, First term: Lectures three hours, workshop two hours a week.

Biochemistry 63.498

Research Project

Students will carry out a research project in either the Biology or Chemistry departments, under the supervision of a faculty member. A report must be submitted to the supervisor by the last day of classes, and will be examined by a committee. Extension to the deadline will be allowed only with the permission of the committee under exceptional circumstances. This course requirement is equivalent to either Biology 61.498 or Chemistry 65.498.

Day division: Laboratory and associated work average at least eight hours a week.

Department of Biology

Officers of Instruction

Chairman

J.M. Neelin

Associate Chairman (Undergraduate Studies)

M.B. Fenton

Associate Chairman (Graduate Studies)

H.G. Merriam

Professors

C.A. Barlow
H.F. Howden
V.N. Iyer
K.W. Joy
P.E. Lee
J.M. Neelin
H.H.J. Nesbitt
G. Setterfield
J.A. Webb
F. Wightman

Associate Professors

Isabel L. Bayly
T.W. Betz
G.R. Carmody
M.B. Fenton
D.R. Gardner
W.I. Illman
S.L. Jacobson
J.D.H. Lambert
Margaret E. McCully
H.G. Merriam
D.A. Smith
H. Yamazaki

Assistant Professor

J. Sinclair

Instructor

Ann Hutton

Adjunct Professors

C.H. Buckner
D.G. Harcourt
W.A. Keller
L. Lefkovitch
J. McNeill
A.T. Matheson
D. Oliver
H. Robertson
D.M. Wood

Sessional Lecturers

Judith Auerbach
P. Barrett
Margaret Gochnauer
Roslyn Grey
L. Lefkovitch
A.T. Matheson
H. Robertson

Curator of Cryptogamic Botany, W.I. Illman

Curator of Greenhouses, H. Datema

Curator of Herbarium, I.L. Bayly

Curator of Zoology Museum, D.A. Smith

General Information

Students intending to Major in Biology are strongly advised to acquire a good background in Chemistry and Physics as well as Mathematics at the Grade 13 or equivalent level.

Undergraduate Programs

The Biology Department offers both Honours and Majors programs leading to a B.Sc. in Biology and a Majors program leading to a B.A. in Biology. Students enrolled in any of these programs must arrange their courses in consultation with the Chairman or Associate Chairman of the Department, in one of the patterns outlined below.

Major Programs

Bachelor of Science in Biology

The Bachelor of Science program in Biology recognizes the strong dependence of most modern biology on the physical sciences and mathematics. It treats biology as a unified subject based on common principles and qualities expressed in diverse ways by different organisms. The Major program is not primarily regarded as professional preparation by itself, but its aim is to provide a strong base in concepts and basic facts which should be adaptable to changing demands and needs in modern society. Students enrolled for a Bachelor of Science degree with a Major in Biology must satisfy the general requirements for Science stated on pp. 246-249 and take the following fifteen courses in a pattern approved by the Chairman:

1. Six Biology courses to include 61.100* or 61.101*, 61.200, 61.215, 61.220*, 61.325*, 61.335*, 61.360.
2. Chemistry 65.100, Physics 75.100*, Mathematics 69.107* and one of 69.117*, or 69.127* or equivalent.*
3. Two additional Science courses above the 100 level and not in Biology.*
4. One additional Science course.*
5. Two approved courses offered by the Faculties of either Arts or Social Sciences.

6. One free option.

*See *Notes on Programs*, p. 256.

Bachelor of Arts in Biology

Students enrolled for a Bachelor of Arts degree with a Major in Biology must satisfy the general requirements of the Faculty of Social Sciences stated on pp. 309-319 and must maintain at least a C- average in Biology courses. The student will follow either the Major Program or Combined Major Program described on p. 315. In either case the approval of the Chairman or Associate Chairman of the Biology Department is required. For the Double Major program, the student should consult with the Department of the other Major subject.

Honours Programs

Honours Bachelor of Science in Biology

The Honours program in Biology is primarily intended for students planning a professional career in research, teaching or administration in biology, or in one of the fields of applied biology, such as the health sciences, agriculture or environmental science. An Honours degree is usually essential for admission to Graduate Studies. Students planning such a career are strongly advised to enter the Honours program as early as possible, certainly by the end of the Second year. Students enrolled for the Honours B.Sc. degree in Biology must satisfy the general requirements for Honours stated on pp. 248-251 and take the following twenty courses in a pattern approved by the Chairman:

1. Seven Biology courses to include 61.100* or 61.101*, 61.200, 61.215, 61.220*, 61.325*, 61.335*, 61.360, 61.498.
2. Chemistry 65.100, Physics 75.100*, Mathematics 69.107* and one of 69.117* or 69.127*, or equivalent.
3. Two additional Science courses above the 100 level and not in Biology*.
4. Four advanced Science courses, selected in consultation with a faculty member working in the area of specialization chosen by the student.
5. One additional course; chosen in consultation, related to the student's area of specialization.
6. Two approved courses offered by the Faculty of either Arts or Social Sciences.
7. One free option.

*See *Notes on programs*, p. 256.

Honours students must pass a course or demonstrate a reading knowledge in French, German or Russian early in the Fourth year. Fourth year students are strongly urged to attend the departmental research seminars.

Selection of Fourth year courses can introduce into the student's program a certain amount of specialization. Possible areas of specialization include molecular, cellular and developmental biology, plant and animal physiology, ecology, and systematics. *Courses should be chosen in consultation with the Chairman or a faculty member working in an area close to the interests of the student.* This consultation should preferably begin before entering the Third year, to ensure that courses which may be given only in alternate years are taken in the correct sequence. In any case, students must consult with the Chairman before registering in the Fourth year.

Students wishing to obtain the Ontario College of Education Interim High School Assistant's Certificate, Type A, are advised to consult the Chairman as soon as possible in their university career in order that an appropriate Honours program may be arranged.

Combined Honours in Biology and Geology

Students desiring a comprehensive basic training in both Biology and Geology may apply for admission to a Combined Honours program, on completion of the First year of the Science program. Applicants must be of Honours standing and must have achieved grades of C- or better in both Biology 61.100 or 61.101 and Geology 67.100.

Course requirements of the Combined Honours program are as follows:

1. Biology 61.100 or 61.101, Geology 67.100, Mathematics 69.107* and 69.117* (or 69.127*) and one of Chemistry 65.100, Physics 75.100 or 75.105. (The omitted subject must have been taken at the Grade 13 level.)
2. Ten courses in Biology (or Biochemistry) and Geology beyond First year level, including at least one course involving a field camp. Not more than six courses in this group should be taken in one department and not more than six may be at the 200 level.
3. Biology 61.498 or Geology 67.498.
4. One half-course in Statistics. (Mathematics 69.258* is recommended) and one half-course in Computing Science (Science 60.200* is recommended.)
5. Three optional courses, at least two of which must be acceptable courses offered by the Faculties of either Arts or Social Sciences.
6. A language requirement must be met during the Third year by passing a course in, or demonstrating reading proficiency in one of French, German, Russian, Spanish, Italian, Greek, or any language acceptable to the committee and in which suitable arrangements can be made for the examination.

Notes on Programs

(See items marked * in programs on pp. 254, 255.)

Students who have completed Grade 13 Biology before entry to First year may take Biology 61.100. All other students must take Biology 61.101.

Students who have not completed Grade 13 Physics (or Physics 75.010) before entry to First year may substitute Physics 75.105 for Physics 75.100.

Mathematics 69.107* plus 69.117* equal former 69.100, and 69.107* plus 69.127* equal former 69.101; students who must take 69.106* may use it as a free option or 100-level science option.

In choosing additional Science courses above the 100 level and not in Biology, students may select from the Science continuation courses listed on p. 248. In their selections, recent Biology students have favoured: Biochemistry 63.300, 63.401*, 63.402*, 63.403*; Chemistry 65.210, 65.222, 65.320; Geology 67.233*, 67.234*; Mathematics 69.250, 69.258*; Computing Science 60.200*; Technology, Society and Environment 59.301, 59.302; Geography 45.210, 45.308, 45.345; Psychology 49.220*, 49.221*, 49.270*. In addition, Chemistry 65.371*, Mathematics 69.207*, 69.208*, Physics 75.230, 75.291*, 75.292* are suggested for some students.

Graduate Program

The Department of Biology offers programs of study and research leading to M.Sc. and Ph.D. degrees in molecular, cellular and developmental biology, plant and animal physiology, ecology and systematics. Details will be found in the Graduate Studies and Research Calendar.

Courses Offered

Biology 61.100

General Biology

A lecture and laboratory course dealing with basic principles and concepts involved in understanding the origins, organization, functions, and behaviour of living organisms. Subject material drawn from the following major areas will be covered: molecular and cellular organization of living systems, origin of life, evolutionary mechanisms, molecular processes and metabolism, energy transformations, membrane structure and function, reproduction and inheritance, genetic mechanisms, development and differentiation, the course of evolution, adaptive form and functions in plants and animals, whole-organism behavioural responses, population dynamics, characteristics of communities and ecosystems. The course is designed for students who have completed Grade 13 Biology and will assume some background in the basic facts of general biology. Emphasis in lectures will be on integrating particular experiments and observations on living systems into

general theories and concepts which apply over large groups of organisms. The laboratory will provide opportunity for experiments and observations on a wide range of life processes and organisms, at the molecular, cellular, organism and population levels of organization. Prerequisite: Ontario Grade 13 Biology or equivalent. Precludes additional credits for Biology 61.101, 61.190. Day division: Lectures three hours a week, laboratory (including tutorials) three hours a week.

Biology 61.101

Introductory General Biology

An introductory lecture and laboratory course presenting the factual basis and principles of biology. The general areas covered are similar to those in Biology 61.100 (above) but greater emphasis will be placed on particular observations, experiments and facts which provide the basis for important generalizations about living things. The laboratory will be similar to that in Biology 61.100. This course is designed for students who have not completed Grade 13 Biology or equivalent.

Precludes additional credits for Biology 61.100, 61.190. Day division: Lectures three hours a week, laboratory (including tutorials) three hours a week.

Biology 61.190

Biology and Man

A course dealing with the major biological concepts which bear directly on human behaviour, thought and culture. Subject materials will be drawn from the following main areas: general organization and properties of living systems, growth, development and differentiation of cells and organisms, properties and functions of genes, sexual reproduction and inheritance, heredity and environment, special problems in human genetics, possibilities and problems in gene manipulation, evolutionary mechanisms, origin of life and the course of evolution, evolution of man, organization of the human body, the immune response, hormonal regulation of metabolism and reproduction, human embryology and abortion, the nervous system, sensory perception, learning, instinct and behaviour, effects of drugs, the ecological niche, man and energy, the ecosystem concept, cycling matter, noncycling energy, ecosystems managed for human benefit. Workshops will provide experience in laboratory experiments, films and demonstrations, tutorials, group discussion, field trips, seminars, etc. in areas parallel to the lecture material. The course is intended primarily for students who would not normally plan further formal training in biology.

Precludes additional credits in Biology 61.100, 61.101. Not a Science credit for Biology Majors.

Not offered 1977-78. Next offered 1978-79.

Biology 61.200

Form and Diversity

A review of the diversity of plants and animals in relation to structure, function and the habitats which they occupy.

Prerequisite: Biology 61.100 or 61.101.

Day division: Lectures three hours a week, laboratory three hours a week.

I. Bayly, H.H.J. Nesbitt

Biology 61.204*

Invertebrate Morphology

Classification, functional morphology, development of invertebrate animal groups.

Prerequisite: Biology 61.100 or 61.101.

Day division, Second term: Lectures three hours a week, laboratory four hours a week.

Biology 61.209*

Morphology of Lower Plants

The morphology, reproduction and evolution of lower plants.

Prerequisite: Biology 61.100, 61.101 or 61.200.

Day division, First term: Lectures three hours a week, laboratory four hours a week.

W.I. Illman

Biology 61.215

Genetics

A lecture and laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function.

Prerequisite: Biology 61.100, 61.101 or 61.200.

Day division: Lectures two hours a week, laboratory four hours a week.

V.N. Iyer

Biology 61.220*

Cell Physiology

The cell concept and the basic processes fundamental to life at the cellular level.

Prerequisites: Biology 61.100 or 61.101 and Chemistry 65.100.

Day division, First term: Lectures three hours a week, tutorial or laboratory four hours a week.

J. Webb

Biology 61.221*

Cytology

The structure, composition, function and development of the major systems of cells and their organelles.

Prerequisite: Biology 61.220*.

Day division, Second term: Lectures two hours a week, laboratory four hours a week.

P.E. Lee

Biology 61.230*

Introductory Microbiology

The biology of microorganisms, particularly in relation to their physiology and economic significance.

Prerequisite: Biology 61.220*.

Day division, Second term: Lectures three hours a week, laboratory four hours a week.

K.W. Joy

Biology 61.250*

Bioenergetics

A course dealing with the role of energy in biology. Topics dealt with include energy flow in ecosystems; energy exchange between an organism and its environment; animal locomotion; vision as an energy detection phenomenon.

Prerequisites: Biology 61.220* and Physics 75.100 or 75.105, or permission of the instructor.

Not offered 1977-78. Next offered 1978-79.

Biology 61.325*

Plant Physiology

The main topics in physiology and metabolism of plants including nutrition, growth, germination and factors controlling these processes.

Prerequisite: Biology 61.220* or Chemistry 65.222; Biology 61.200 or permission of the instructor.

Day division, Second term: Lectures three hours a week, laboratory four hours a week.

J.A. Webb

Biology 61.335*

Animal Physiology

The properties of physiological systems and components of animals with emphasis on their physico-chemical bases.

Prerequisites: Biology 61.220* or Chemistry 65.210. Physics 75.100 or 75.105, and Mathematics 69.107*, and 69.117* or 69.127* are strongly recommended.

Day division, First term: Lectures three hours a week, laboratory four hours a week.

S. Jacobson

Biology 61.360

Ecology

A lecture and laboratory course on the principles of plant and animal ecology.

Prerequisites: Biology 61.200 and 61.215 or equivalents.

Day division: Lectures three hours a week, laboratory and seminar four hours a week.

H.G. Merriam

Biology 61.365*

Field Course

A course providing students with an opportunity for intensive, continuous study of living organisms under natural conditions. Credit is based on two weeks of full-time field work with attendant assignments, selected from several one- or two-week modules with various instructors. Costs of long-distance transportation (if applicable), room and board relating to the course are borne by the student. (Details may be obtained from the co-ordinator.)

Prerequisites: At least one course in Biology beyond the 100 level, and written permission of the co-ordinator. No more than one-half credit may be obtained from Biology 61.365*.

Day division: All day, approximately six days a week, offered at different times during the year.

M.B. Fenton (co-ordinator)

Biology 61.370

The Flora and Fauna of Canada

An introduction to practical taxonomy and biogeography through field and laboratory study of representative Canadian plants and animals with emphasis on local forms. It is recommended that students make collections of plants and animals during the summer before the course is taken. Detailed directions may be obtained from the instructors.

Prerequisites: Biology 61.200, or 61.205 and 61.210.

Not offered 1977-78. Next offered 1978-79.

Biology 61.391*

Biology in Society

A seminar course dealing with selected areas of biological knowledge with direct relevance to social activities of man. Not available as a continuing Science course for students other than Biology Majors except with permission of the student's Major department.

Prerequisite: Biology 61.200 or permission of the instructor.

Day division, First term: Seminar and discussion three hours a week.

J.D.H. Lambert

Biology 61.401*

Mycology

The morphology evolution and biological importance of the fungi.

Prerequisite: Biology 61.200.

Day division, Second term: Lectures two hours a week, laboratory four hours a week.

W.I. Illman

Biology 61.402*

Phycology

An advanced course dealing with the occurrence, ecological role, morphology, reproduction and evolution of the algae.

Prerequisite: Biology 61.200.

Day division, First term: Lectures two hours a week, laboratory four hours a week.

W.I. Illman

Biology 61.405

Invertebrate Zoology

An advanced course on the classification, morphology, comparative physiology and evolution of invertebrate animals.

Prerequisites: Biology 61.215 and 61.204*.

Reference texts: Grassé, *Traité de Zoologie (appropriate volumes)*; Hyman, *The Invertebrates*.

Not offered 1977-78. Next offered 1978-79.

Biology 61.410

Plant Morphogenesis

A course dealing with the problems of plant development.

Prerequisites: Biology 61.200 and consent of the instructor. Enrolment limited.

Not offered 1977-78. Next offered 1978-79.

Biology 61.415

Chordate Zoology

An advanced course on the classification, geographic distribution and evolution of the major groups of chordates. As part of his practical work, each student must make a collection of chordates, preferably during the summer before the course is taken. Detailed directions may be obtained from the instructors.

Prerequisite: Biology 61.200.

Day division: Lectures two hours a week, laboratory four hours a week.

D.A. Smith

Biology 61.417

Methods in Molecular Genetics

The scope and purpose of the course is to review and acquire some familiarity with the successful use of genetic techniques in the solution of problems in molecular biology. Emphasis will be on the laboratory which will be "unstructured" and on discussion of innovations in genetic techniques. The course will be suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.

Prerequisites: Biology 61.215 or equivalent and a course in Biochemistry or Microbiology.

Not offered 1977-78. Next offered 1978-79.

Biology 61.418

Population Genetics

A lecture and seminar course on both theoretical and experimental population genetics.

Prerequisite: Biology 61.215. A course in statistics is highly recommended.

Day division: Lectures two hours a week, seminar and laboratory two hours a week.

G.R. Carmody

Biology 61.423

Analytical Cell Biology

A lecture and laboratory course dealing with the theory and practice of modern analytical methods used in experimental cell biology. Emphasis will be on methods which give information relating to cell structure or structure-function relations such as fixing, sectioning, staining, light and electron microscopy, autoradiography, photomicrography and biophysical methods. Some treatment of related biochemical techniques such as cell fractionation, electrophoresis and immunodiffusion will also be included. The main emphasis will be on independent laboratory work.

Prerequisite: Biology 61.221* or equivalent.

Offered in 1977-78 and alternate years.

Day division: Lecture one and a half hours a week, laboratory six hours a week.

P.E. Lee

Biology 61.424

Experimental Cell Biology

A lecture and seminar course on modern aspects of the molecular organization, division, growth, differentiation and interactions of cells. Particular emphasis will be

paid to genome organization and function, ribosomes, endomembranes and protein synthesis, self assembly processes, cell membranes, and cell interactions, cell division and cell movements, cell-tissue relationships, regulation of cell processes, aging, abnormal cellular processes. The main level of treatment will be at the microscopic and macro-molecular levels. Emphasis will be on eucaryotic organisms, both animal and plant, although where relevant procaryotes will be considered. Students will be expected to present one seminar in each term.

Prerequisite: Biology 61.215 and 61.221* or equivalent. Not offered 1977-78. Next offered 1978-79.

Biology 61.425

Plant Physiology

An advanced lecture and laboratory course dealing with physiology and biochemistry of seed germination, seedling growth and vegetative development, flowering, fruiting, senescence and winter dormancy in the higher plants.

Prerequisites: Biology 61.325* and Chemistry 65.220 or 65.222.

Day division: Lectures two hours a week, laboratory four hours a week.

F. Wightman

Biology 61.426*

Plant Metabolism I

A lecture and seminar course with emphasis on autotrophic metabolism of plants, including photosynthetic processes, nitrogen assimilation and sulphur reduction.

Prerequisites: Biology 61.325* and Biochemistry 63.300 or Chemistry 65.220 or 65.222.

Not offered 1977-78. Next offered 1978-79.

Biology 61.427*

Plant Metabolism II

A lecture and seminar course of selected topics including: metabolic basis of physiological responses, regulatory mechanisms in plants, metabolic aspects of crop productivity.

Prerequisite: Biology 61.325*. Biochemistry 63.300 is recommended.

Not offered 1977-78. Next offered 1978-79.

Biology 61.435

Animal Physiology

A course in some detail with advances made in particular areas of animal physiology.

Prerequisites: Biology 61.335*; Chemistry 65.220 or 65.222; Chemistry 65.210; and Physics 75.100 or 75.105; or permission of the instructor.

Day division: Lectures two hours a week, laboratory four hours a week.

D.R. Gardner

Biology 61.440

Taxonomy of the Flowering Plants

A general survey of the flowering plants, the bases for classification and the history of taxonomy. A project will be assigned.

Prerequisite: Biology 61.210 or 61.200.

Text: Lawrence, *Taxonomy of Vascular Plants*.

Day division: Lectures two hours a week, laboratory four hours a week.

I.L. Bayly

Biology 61.455

Animal Development

A lecture, seminar and laboratory course on the descriptive and experimental parameters of animal development.

Prerequisites: Biology 61.205 or 61.200, and permission of the instructor.

Text: Balinsky, *An Introduction to Embryology*.

Day division: Lectures three hours a week, laboratory four hours a week.

T.W. Betz

Biology 61.460

Insect Morphology

A course on the morphology of representatives of the more important orders and families of insects. This course is complementary to Biology 61.461, which is offered in alternate years.

Prerequisite: Biology 61.205 or 61.200.

Text: Duporte, *Manual of Insect Morphology*.

Reference Text: Snodgrass, *Principles of Insect Morphology*.

Day division: Lectures two hours a week, laboratory four hours a week.

H.H.J. Nesbitt

Biology 61.461

Principles of Systematic Entomology

A lecture and laboratory course devoted to the study of identification of insects, the principles of theoretical taxonomy, some aspects of insect behaviour and control measures. Instructions and equipment for the required insect collection can be obtained the spring prior to the course from Dr. Howden. This course is complementary to Biology 61.460.

Prerequisite: Permission of the instructor.

Not offered 1977-78. Next offered 1978-79.

Biology 61.465

Quantitative Ecology

Quantitative and qualitative analyses of the distribution and abundance of plant and animal species and communities, and of related environmental phenomena.

Prerequisite: Biology 61.360 and Mathematics 69.257* or equivalent.

Day division: Lectures two hours a week, laboratory four hours a week.

C.A. Barlow

Biology 61.469*

Evolutionary Concepts

Evolution as related to gene pools, isolation, speciation, natural selection, competition, dominance and distributional patterns; examples from North America biota are emphasized.

Prerequisite: Biology 61.200. Biology 61.360 is strongly recommended.

Day and Evening divisions, First term: Lectures two hours a week, laboratory four hours a week.

H. Howden

Biology 61.471*

Evolution and Biogeography

A continuation of concepts developed in Biology 61.469* and applied to world biotic patterns. Community evolution, tropical diversity and temporal stability are considered.

Prerequisite: Biology 61.469*.

Day and Evening divisions, Second term: Lectures two hours a week, laboratory four hours a week.

H. Howden

Biology 61.475

History of Biology

A seminar course on the history of biology and biological theory.

Prerequisites: Biology 61.215, a course in physiology at least concurrently, and permission of the instructor.

Not offered 1977-78. Next offered 1978-79.

Biology 61.481*

Animal Behaviour

An advanced half course in the study of animal behaviour. Topics such as predator-prey interactions, mating behaviour, migration, mother-young interactions, social behaviour and inter- and intra-specific spacing behaviour will be interpreted in an ecological context. Lectures, seminars and laboratories will be used to achieve this coverage.

Prerequisites: Biology 61.335* and 61.360 (or suitable equivalents) and with written permission of the instructor. Enrolment limited.

Day division, First term: Lectures two hours a week, laboratory four hours a week.

M.B. Fenton

Biology 61.490

Directed Special Studies and Seminar

Day division: Annually, with permission of the Chairman.

Members of the Department

Biology 61.491*

Directed Special Studies

Day division, both terms: Annually, with permission of the Chairman.

Members of the Department

Biology 61.498

Research Project

Fourth year Honours students must carry out a research project under the supervision of a member of the

Department. Approval of the topic and research schedule must be obtained from the supervisor and Chairman before the last day for late registration. Each student's performance will be examined by a Faculty Committee after the completion of the project; this examination will be evaluated to account for twenty percent of the total grade. For the remainder of the grade each student will prepare a written report to be submitted to the supervisor before the last day of scheduled classes. Extensions to the deadline will be allowed only at the discretion of the Chairman of the Department under limited circumstances.

Courses Planned for Summer School and Evening Division 1976-79

Summer 1977

61.100, 61.215, 61.325*, 61.490, 61.491*, 61.498.

Evening Division 1977-78

61.469*, 61.471*.

Summer 1978

61.200, 61.209*, 61.335*, 61.490, 61.491*, 61.498.

Evening Division 1978-79

61.100, 61.418, 61.425.

Summer 1979

61.100, 61.220*, 61.370, 61.490, 61.491*, 61.498.

Evening Division 1979-80

61.250*, 61.325*, 61.460.

Officers of Instruction

Chairman

C.H. Amberg

Professors

C.H. Amberg
J.W. ApSimon
R.G. Barradas
C.L. Chakrabarti
J.M. Holmes
J.A. Koningstein
C.H. Langford
P.M. Loughton
C.S. Tsai
D.R. Wiles

Associate Professors

G.W. Buchanan
P. Kruus
M. Parris
D.C. Wigfield
R.H. Wightman
J.S. Wright

Assistant Professor

R.A. Shigeishi

Lecturer

I. Mary Valeriote

Adjunct Professors

H.J. Bernstein
E.J. Casey
O.E. Edwards
E.A. Flood
S.A. Narang
I.E. Puddington
I.C.P. Smith

General Information

Students intending to enter a program in Chemistry should have a strong background and interest in Mathematics and Physics. The three-year Major and four-year Honours programs in Chemistry are described below. Students interested in continuing their careers in secondary school teaching, graduate studies or as professional chemists are advised to enrol in the Honours program.

A Combined Honours program in Chemistry and Geology is available as described below.

While Combined Honours in Chemistry and Mathematics or Chemistry and Physics are not formally available, strong continuation groupings in Mathematics and/or Physics can be arranged under the Honours Chemistry program. Secondary specialization in Biology can be arranged under the Honours Chemistry program, or

under the joint program in Honours Biochemistry. In evaluating students for entry with advanced standing, the Department of Chemistry transfers credits but not grades.

Major Program

A total of ten courses is required for graduation after completion of the First year Science Faculty requirements. This program must be completed before continuation into Second year and must include Chemistry 65.100, Mathematics 69.107*, 69.117*, Physics 65.100, and one other First year Science course.

The total program (including First year) must contain:

1. Chemistry 65.100, 65.210, 65.220, 65.250 and two full credits in Third year Chemistry including Chemistry 65.311* or 65.310, and at least one of 65.315*, 65.325* or 65.355*; only one of Chemistry 65.370* and 65.371* may be used to meet the Third year requirement;
2. Mathematics 69.107*, 69.117* and 69.202 or approved equivalents;
3. Physics 75.100 and 75.230 or approved equivalents;
4. A First year Science course (as required in the First year program);
5. Two Arts electives (see Science Faculty regulations);
6. One Science course or other approved course chosen after consultation with the Department of Chemistry;
7. One free option.

It is recommended that candidates choose a course in French, German or Russian as one of their Arts electives.

Honours Program

A total of fifteen courses is required for the degree after completion of First year Science requirements. These requirements are the same as for the Major program except that, based on the results of an assessment test and permission of the Chairman of the Department, outstanding students may be allowed to take Chemistry 65.220 in the First year instead of Chemistry 65.100. However, the total number of courses required will remain unchanged. In addition to the Faculty requirement of a C- average in Chemistry, the Department also requires at least half C- or better standing, and counts all Chemistry courses taken.

The total program (including First year) must contain:

1. Chemistry 65.100, 65.210, 65.220, 65.250, 65.310; two of 65.315*, 65.325* and 65.355*; one full credit from 65.320, 65.321*, 65.350, 65.351* or Biochemistry

63.300; one full credit at the 400 level in Chemistry or Biochemistry and Chemistry 65.498;

2. Mathematics 69.107*, 69.117* and 69.202 or approved equivalent;

3. Physics 75.100 and 75.230 or approved equivalent;

4. A First year Science course (as required in the First year program);

5. Two Arts or Social Science electives (see Science Faculty regulations);

6. Three Science or other approved courses;

7. One free option.

Each candidate for Honours is required to demonstrate a reading knowledge of one of scientific French, German or Russian.

The Chemistry Department includes all Chemistry courses taken in calculating Honours standing.

Honours Project

Each Honours candidate is required, as part of Chemistry 65.498, in the final year to carry out a substantial project and to write a report to his supervisor. Towards the end of the Third year, prospective candidates should obtain pertinent information from the departmental office. A brief progress report is to be presented to the supervisor and committee members before January 15. The deadline for submission of the final typed report is the first Monday in April. Honours students are also expected to attend departmental seminars in their specialty. The report and its defence are heavily weighted in determining the class of Honours awarded. The grade of *In Progress* will be restricted to unusual circumstances and subject to approval by the Department.

Combined Honours in Chemistry and Geology

Program Advisers: C.L. Chakrabarti and G.B. Skippen

A total of fifteen courses is required for the degree after completion of the First year Science requirements. The First year program must include Chemistry 65.100, Geology 67.100, Mathematics 69.107* and 69.117*, and Physics 75.100.

The total program (including First year) must contain:

1. Chemistry 65.100, 65.210, 65.250, 65.350 and one Chemistry credit at the 400 level;

2. Geology 67.100, 67.221*, 67.222*, 67.228*, 67.281*, 67.325 and one Geology credit at the 400 level;

3. Either Chemistry 65.498 or Geology 67.498. Students should consult their program adviser about selection of this in their Third year;

4. One Chemistry or Geology elective;

5. Mathematics 69.107*, 69.117* and 69.202;

6. Physics 75.100;

7. Two Science electives;

8. Two Arts or Social Science electives;

9. One free option.

A language requirement must be met during the Third year by passing a course in, or demonstrating reading proficiency in one of French, German or Russian.

Graduate Program

The Department of Chemistry offers studies leading to the degree of Master of Science and to the degree of Doctor of Philosophy. For further details consult the Graduate Studies and Research Calendar.

Courses Offered

Chemistry 65.010

Introductory Chemistry

An introductory course emphasizing the fundamental laws and principles of chemistry. Accurate working of numerical problems will form an important part of the course. The laboratory course is designed to teach fundamental techniques and to give familiarity with some physical and chemical properties of a selected group of substances.

Day division: Lectures three hours a week, laboratory three hours a week.

Chemistry 65.100

General Chemistry

Some models and theories of gases, solids, liquids and solutions; electronic structure of atoms; energy states and spectra; periodic properties of the elements; the structure of covalent and ionic substances; energy relationships and theories in bonding, equilibria, and rates of reactions. The laboratory course will give training in fundamental techniques and methods of experimental work in analysis, synthesis and other aspects of chemistry.

Prerequisites: Chemistry 65.010 and Mathematics 69.006* and 69.007*, or equivalent. This course is intended for students in all programs who plan to take further chemistry courses.

Day and Evening divisions: Lectures three hours a week, laboratory three hours a week.

Chemistry 65.106

Chemistry, Man and Society

A course developing the fundamental principles of chemistry by illustrating their relevance to the properties of substances and the processes which occur in (i) the environment; (ii) industry; (iii) common consumer products; and (iv) the human body. Emphasis will be placed on topics which are currently important social issues.

This course may not be used as a Science option by Science students, nor as a prerequisite for further study

in Chemistry. It precludes additional credit in Chemistry 65.100.

Prerequisites: At least Ontario Grade 12 Chemistry.

Day division: Lectures three hours a week.

Chemistry 65.111*

Chemistry for Engineering Students

This introductory course for First year Engineering students employs primarily the vehicle of solid state chemistry to familiarize students with fundamental chemical principles. Topics such as atomic structure; the periodic system; ions and valence will be treated, as will be chemical crystallography, the properties of metals, semiconductors and insulators, and the properties of electrolytic solutions. This course is not a prerequisite for further Chemistry courses. However, individual students wishing to take further Chemistry courses will be considered on their merits.

Prerequisites: Chemistry 65.010, Mathematics 69.006* and 69.007*, or equivalents.

Day division, First term: Lectures three hours a week, laboratory three hours a week.

Chemistry 65.210

Introductory Physical Chemistry

An introduction to thermodynamics and its application to problems of phase equilibria, chemical equilibria, surface chemistry, and electrochemistry. Principles of chemical dynamics and their application to analysis of reaction mechanisms.

Prerequisites: Chemistry 65.100, Mathematics 69.107* and 69.117* or equivalent.

Day and Evening divisions: Lectures three hours a week, problems one hour a week, laboratory three hours a week.

Chemistry 65.220

Elementary Organic Chemistry

Structure, synthesis and reactions of the main functional groups using both aliphatic and aromatic examples and emphasizing a mechanistic approach. Elementary stereochemistry. Biologically and industrially important molecules used as examples whenever possible. The laboratory includes transformations and characterization of selected functional groups as well as introductory spectroscopy.

Prerequisite: Chemistry 65.100.

Day division: Lectures three hours a week, laboratory four hours a week.

Chemistry 65.222

Introductory Organic Chemistry

A course for non-chemistry Majors. An introduction to organic chemistry paralleling Chemistry 65.220 but with an introduction to, and emphasis on, the chemistry of biologically important compounds. Laboratory similar to Chemistry 65.220.

Prerequisite: Chemistry 65.100.

Day division: Lectures three hours a week, laboratory four hours a week.

Chemistry 65.250

Elementary Inorganic and Analytical Chemistry

The chemical principles underlying gravimetric, titrimetric, and instrumental analysis; atomic structure, bonding, molecular and crystal structure; acid-base, coordination complex, and oxidation-reduction systems; solubility, and crystallization; ionic solutions; chemistry of non-transition elements. Laboratory work in classical and instrumental analysis.

Prerequisites: Chemistry 65.100, Mathematics 69.107* and 69.117* or equivalent.

Day division: Lectures and problem sessions three hours a week, laboratory four hours a week.

Chemistry 65.301*

Experimental Chemistry

An integrated laboratory-based course designed to acquaint students with advanced concepts and techniques required to study. Students will be responsible for literature surveys, acquisition of the theoretical background and mathematical analysis of data.

Prerequisites: Chemistry 65.210 and at least one of Chemistry 65.220, 65.222 or 65.250. A Third year level Chemistry course must be taken as a pre- or co-requisite.

Day division, both terms: Laboratory and seminars five hours a week.

Chemistry 65.310

Physical Chemistry

An introduction to quantum mechanics, and its use in explaining atomic and molecular structure and spectra; introduction to statistical mechanics and its application to simple systems; theories of chemical kinetics with applications.

Prerequisites: Chemistry 65.210, Mathematics 69.202 or equivalent.

Day division: Lectures and problems four hours a week.

Chemistry 65.311*

Quantum Chemistry

Introduction to quantum theory, with emphasis on chemical applications. Wave functions, energy states, atomic orbitals, origins of chemical bonding, vibrational and electronic spectra, hybridization and molecular structure, symmetry, Hückel theory of conjugated molecules.

Prerequisites: Chemistry 65.210, Mathematics 69.202 or equivalent.

Day division, First term: Lectures and problems three hours a week.

Chemistry 65.315*

Experimental Physical Chemistry

A laboratory-based course designed to acquaint students with advanced concepts in physical chemistry and the use of more advanced physico-chemical techniques in other areas of chemistry. Students will be responsible for literature surveys, acquisition of theoretical background, design of experimental procedures and mathematical analysis of data.

Prerequisites: Chemistry 65.210 and at least one of 65.220 and 65.250. Prerequisites or Co-requisites: Chemistry 65.310 or 65.311*.

Day division, both terms: Laboratory and seminars five hours a week.

Chemistry 65.320

Intermediate Organic Chemistry

Molecular rearrangements and other organic reactions not previously studied. Synthetic sequences. Mechanisms with emphasis on reactive intermediates. Structure elucidation and stereochemistry using instrumental methods. Use of the literature of organic chemistry. Topics selected from: heterocyclic compounds, natural products, polymers, newer synthetic methods, phosphorus and sulfur compounds, photochemistry, structure reactivity relationships.

Prerequisite: Chemistry 65.220 or 65.222.

Texts: Williams and Fleming, *Spectroscopic Problems in Organic Chemistry*; March, *Advanced Organic Chemistry*, second edition.

Day division: Lectures three hours a week.

Chemistry 65.321*

Intermediate Organic Chemistry

Instrumental methods for the determination of structure. Intermediates in organic reactions. The literature of organic chemistry.

Prerequisites: Chemistry 65.220 or 65.222.

Texts: Williams and Fleming, *Spectroscopic Problems in Organic Chemistry*; Williams and Fleming, *Spectroscopic Methods in Organic Chemistry*.

Chemistry 65.325*

Experimental Organic Chemistry

A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students will be responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.

Prerequisites: Chemistry 65.210 and either 65.220 or 65.222.

Prerequisites or Co-requisites: Chemistry 65.320, 65.321*, or Biochemistry 63.300 or permission of the instructor.

Day division, both terms: Laboratory and seminars five hours a week.

Chemistry 65.350

Intermediate Inorganic Chemistry

Chemistry of the transition metals: role of d orbitals, preferred oxidation states, periodic variation in ionic size, redox equilibria. Chemistry of coordination compounds: nomenclature, isomerism, stability constants, bonding and kinetics. Chemistry of organometallic compounds. Structure of metals, semi-conductors and non-stoichiometric compounds. Metallurgy: ordered/disordered structures, phase diagrams and thermodynamics. Introduction to radiochemistry.

Prerequisites: Chemistry 65.210, 65.250.

Day division, First and second terms: Lectures three hours a week.

Chemistry 65.351*

Intermediate Inorganic Chemistry

Chemistry of the transition metals: role of d orbitals, preferred oxidation states, periodic variation in ionic size, redox equilibria. Chemistry of coordination compounds: nomenclature, isomerism, stability constants, bonding and kinetics.

Prerequisites: Chemistry 65.210, 65.250.

Day division, First term: Lectures three hours a week.

Chemistry 65.355*

Experimental Inorganic and Analytical Chemistry

A laboratory-based course including advanced concepts and techniques in inorganic synthesis, structure determination, and analytical chemistry. Students will be responsible for literature surveys, acquisition of theoretical background, design of experimental procedures and mathematical analysis of data.

Prerequisites: Chemistry 65.210 and 65.250.

Prerequisites or Co-requisites: Chemistry 65.350, 65.351* or permission of the instructor.

Day division, both terms: Laboratory five hours a week.

Chemistry 65.370*

Industrial Applications of Chemistry

A course reviewing, relating and extending the material of prerequisite chemistry courses through studies of problems in applied chemistry and introducing concepts necessary for conversion of laboratory processes to the industrial scale. The course will cover several topics designed to illustrate a wide range of applications in as many areas of chemistry as possible.

Prerequisites: Chemistry 65.210, and one of Chemistry 65.220, 65.222 or 65.250.

Day division, Second term: Lectures three hours a week.

Chemistry 65.371*

Environmental Chemistry

A course applying chemical principles to the study of the hydrosphere, the atmosphere and soils. Topics include composition and history of the hydrosphere and atmosphere, equilibrium modelling, microbiological catalysis of chemical transformations, water sediment interfacial chemistry, soil chemistry, chemical aspects of pollution abatement.

Prerequisites: Chemistry 65.250, or Geology 67.325, or Engineering 82.311* and 88.240*, or Chemistry 65.222 and Biology 61.220*, or Geography 45.308.

Lectures three hours a week.

Chemistry 65.410*

Introduction to Quantum Chemistry

Theory of wave functions and energy levels of molecules. The variation method and molecular orbital calculations and aspects of group theory.

Prerequisite: Chemistry 65.310 or 65.311* or Physics 75.361* or permission of the instructor.

Day division, First term: Lectures and seminars three hours a week.

Chemistry 65.411*

Advanced Calculations in Physical Chemistry

A course reviewing and extending the concepts covered in Chemistry 65.210 and 65.310 by applying these concepts to more advanced, practically oriented problems. The emphasis will be on problems involving thermodynamics, statistical mechanics and kinetics.

Prerequisites: Chemistry 65.310 or permission of the instructor.

Day division, Second term: Lectures and seminars three hours a week.

Chemistry 65.412*

Chemical Kinetics

Theories of rates of chemical reaction with application to elementary gas and solution reactions. Complex reactions in gases, solutions and on surfaces.

Prerequisite: Chemistry 65.310, or permission of the instructor.

Not offered 1977-78.

Chemistry 65.413*

Colloid and Surface Chemistry

Properties and stability of colloidal systems, theories of adsorption, heterogeneous catalysis, and interfacial phenomena.

Prerequisite: Chemistry 65.210 or permission of the instructor.

Day division, Second term: Lectures and seminars three hours a week.

Chemistry 65.420*

Physical Organic Chemistry

Hückel molecular orbital calculations. Woodward-Hoffmann rules. Experimental methods for determining reaction mechanisms. Linear free energy relationships. Mechanism problem solving.

Prerequisite: Chemistry 65.320 or 65.321* and 65.310 or 65.311* or permission of the instructor.

Day division, First term: Lectures and discussions three hours a week.

Chemistry 65.422*

Structural Organic Chemistry

Methods of structural elucidation of complex organic molecules. Topics to include the use of instrumental methods, stereochemistry and conformational analysis.

Prerequisite: Chemistry 65.320 or 65.321* or permission of the instructor.

Day division, First term: Lectures and seminars three hours a week.

Chemistry 65.423*

Synthetic Organic Chemistry

The application of reactions to the synthesis of organic molecules. Emphasis on design of sequence, new reagents and stereoselectivity.

Prerequisite: Chemistry 65.320 or permission of the instructor.

Day division, Second term: Lectures and seminars three hours a week.

Chemistry 65.430*

Electroanalytical Chemistry

Properties of ionic solutions, electrode processes, theory and application of electroanalytical techniques and reactions.

Prerequisites: Chemistry 65.250, 65.310 or permission of the instructor.

Day division, First term: Lectures and seminars three hours a week.

Chemistry 65.431*

Instrumental Methods of Analysis

Selected topics from: Atomic and molecular absorption spectroscopy. Emission spectroscopy. X-ray methods. Mass spectrometry. Differential migration methods: solvent extraction, ion exchange, chromatography.

Prerequisites: Chemistry 65.210, 65.250, or permission of the instructor.

Day division, Second term: Lectures and seminars three hours a week.

Chemistry 65.450*

Applications of Ligand Field Theory

Introduction to quantitative crystal field theory; the weak field approximation and application to heats of ligation; the strong field approximation and application to spectra and magnetism.

Prerequisites: Chemistry 65.310 and 65.350.

Day division, Second term: Lectures three hours a week.

Chemistry 65.451*

Thermodynamic Aspects of Inorganic Chemistry

The course will treat topics in solid state chemistry, high temperature chemistry, and solution chemistry that are especially susceptible to thermodynamic analysis. Applications in metallurgy and mineralogy will receive attention.

Prerequisites: Chemistry 65.210 and 65.350 or 65.351*, or permission of the instructor.

Day division, Second term: Lectures and seminars three hours a week.

Chemistry 65.452*

Radiochemistry

A study of nuclear stability and decay; chemical studies of nuclear phenomena. Selected laboratory experiments are optional.

Prerequisites: Chemistry 65.210 and 65.350 or 65.351*, or permission of the instructor.

Reference text: Friedlander, Kennedy, and Miller, *Nuclear and Radiochemistry*.

Day division, First term: Lectures and seminars three hours a week.

Chemistry 65.498

Research Project and Seminar

Senior students in Honours Chemistry will carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.

Day division, Annually: Laboratory and associated work at least eight hours a week.

Courses Planned for Summer School and Evening Division 1977-79

Summer 1977

65.100, 65.350, 65.351*, 65.371*.

Evening Division 1977-78

65.100, 65.210, 65.410*, 65.423*, 65.431*, 65.452*.

Summer 1978

65.320, 65.321*.

Evening Division 1978-79

65.250, 65.413*, 65.420*, 65.430*, 65.451*.

Geography

Honours Program: B.Sc.

The Bachelor of Science Honours program in Physical Geography is designed to give the student an understanding of the earth's surface as man's physical environment. The student will specialize in the study of properties and processes of the earth's surface materials and atmosphere and the interactions between these.

The program consists of twenty courses beyond Senior Matriculation or Qualifying University year Science, selected in a pattern approved by the Supervisor of Honours Studies in the Geography Department, and consistent with the following requirements.

1. The First year of the program will be consistent with Science Faculty requirements for First year Science.
2. The program will contain eight full courses in Geography at or beyond the 200 level, including the Honours Research Project 45.496 which should be taken in the final year.
3. Seven full courses to be taken must be selected from the list below and should include Geography 45.210, 45.299*, 45.308, 45.312 and 45.345. In special cases students may take an appropriate graduate course in their final year, with permission of the Supervisor of Graduate Studies.

Geography

- 45.200* Introduction to Cartography
- 45.201* Statistical Methods in Geography
- 45.202* Air Photo Interpretation
- 45.210 Physical Geography
- 45.299* Introduction to Field Techniques
- 45.303* Quantitative Geography
- 45.308 Geography of Soils
- 45.312 Geomorphology
- 45.325 Cartography
- 45.345 Climatology
- 45.402* Problems in Physical Geography
- 45.410* Advanced Field Geography
- 45.411* Quaternary Geography
- 45.412* Terrain Analysis
- 45.413* Hydroclimatology
- 45.414* Micrometeorology
- 45.415* Slope Development: Forms, Processes and Stability
- 45.416* Engineering Geomorphology
- 45.417* Glacial Geomorphology
- 45.418* Selected Topics in Physical Geography
- 45.424* Soil Mechanics

Physics

75.100 or 75.105 (required course in the Second year of the program if not taken in First year)

Mathematics

69.257* or 69.258*

Geology

67.233* and 67.281*

4. The remaining seven courses must include:

- (a) Two approved courses in Science, not in Geography, beyond the 100 level;
- (b) Two approved courses in Science, Computing Science or Engineering;
- (c) Two Arts or Social Science electives, one of which must be an approved course, not in Geography;
- (d) One free elective.

A recommended program is:

First year

Mathematics 69.107* and 69.117*

Chemistry 65.100

Geology 67.100

One of: Geography 45.210, Biology 61.100 or Physics 75.100

Arts or Social Science elective (may not be Geography 45.101 if 45.210 is selected)

Second year

Geography 45.200*, 45.202*, 45.299*

Geography 45.210 or 45.308 or 45.345

Mathematics 69.257*

Science elective or Physics 75.100 or 75.105 (required course in Second year if not taken in First year)

Arts or Social Science Elective

Third Year

Geography 45.312

Geography 45.308 or 45.345

One 400-level Geography

One Science continuation course

Arts or Social Science elective

Fourth Year

Three 400-level Geography courses (including 45.496)

One Science continuation course

Free option

Note: A Human Geography course is recommended as one of the Arts or Social Science electives.

Details of individual course offerings are presented in the Department of Geography submission in the Faculty of Social Sciences section of the calendar, p. 341.

Department of Geology

Officers of Instruction

Chairman

J.M. Moore, Jr.

Professors

G.Y. Chao

J.A. Donaldson

P.A. Hill

J.M. Moore, Jr.

F.K. North

W.M. Tupper

Associate Professors

K. Bell

R.L. Brown

K. Hooper

G. Ranalli

G.B. Skippen

D.H. Watkinson

R.W. Yole

Adjunct Professors

E. Froese

E. Irving

J. Kukulova-Peck

D.F. Sangster

Sessional Lecturers

R.L. Borden

B.N. Nandi

A.D. Stanley

R.W. Stemp

Major Program

The B.Sc. program in Geology is of *four* years duration beyond Senior Matriculation or Qualifying University year. A total of twenty courses is required as follows:

1. The course requirements of the First year of the general B.Sc. program (p. 247).

2. At least ten courses in Geology, of which Geology 67.100, 67.221*, 67.222*, 67.228*, 67.281*, 67.233*, 67.234*, 67.323*, 67.324*, 67.333*, 67.334*, and 67.385 are mandatory. (Geology 67.100 may be taken either in Qualifying University or First year.) Students intending to Major in Geology should take Geology 67.100 rather than Geology 67.111* and 67.112*. *Credit will be given for only one of Geology 67.100 or Geology 67.111*.*

3. At least six courses in the other sciences. Among these, Mathematics 69.107*, and 69.117* or 69.127* and Chemistry 65.100 are mandatory, and at least two First year Science or Mathematics courses must be passed before registration for Second year Geology courses will be permitted.

4. Two approved courses in the Faculty of Arts.

5. Two courses chosen from Science, Arts, Social Sciences or Engineering.

A three-year program for students not intending to become professional geologists is also available. Requirements are the same as for the B.Sc. program outlined above, except that no courses above the 300 series are required, and the total courses will number fifteen, including seven Geology courses, at least five Science courses outside of Geology, which must include Mathematics 69.107*, and 69.117* or 69.127* and Chemistry 65.100, two Arts or Social Science courses and one optional course.

A typical program is as follows:

First Year

Geology 67.100*

Chemistry 65.100

Physics 75.100 or 75.105 or Biology 61.100 or 61.101

Mathematics 69.107*, and 69.117* or 69.127*

Arts or Social Science elective

(* May be replaced by another Science course if taken in Qualifying University year.)

Second Year

Geology 67.221*, 67.281* (includes field camp),

67.222*, 67.228*, 67.233* and 67.234*

One First or Second year Science course

One Arts or Social Science elective

Third Year

Geology 67.323*, 67.324*, 67.333*, 67.334*, and 67.385

Second year Science course

One elective (Arts, Social Science, Science or Engineering)

Fourth Year

Three Geology courses at the 400 level

One Second year Science course

One elective (Arts, Social Science, Science or Engineering)

Notes

1. A working knowledge of elementary Biology is required for Geology 67.234* and 67.333*. This requirement may be fulfilled by credit for Grade 13 Biology, Biology 61.100, or 61.101, or by arrangement with the instructor for extra reading assignments in Geology 67.234*.

2. Certain courses in the 200 and 300 series may be arranged in groups of half-course credits for non-Geology Majors in consultation with the department.

3. All Major and Honours students should note that their selection of Science courses, including Mathematics, should be made with the prerequisites for subsequent Geology courses in mind.

4. Many Fourth year courses are given in alternate years only. Third year students possessing prerequi-

sites may be admitted to Fourth year courses with the instructor's permission; certain Fourth year subjects are offered in the Department of Geology, University of Ottawa, so as to alternate with Carleton. In 1977-78, complementary Geology half-courses at the University of Ottawa, of which up to two may be taken, include:

First Term

Geology

- 4310 Paleogeology - O.A. Dixon
4320 Mineralogy IIa - D.D. Hogarth and others
4342 Chemical Phase Theory - R. Kretz
4390 Precambrian Geology - A.J. Baer

Second Term

Geology

- 4311 Evolution and the Fossil Record - O.A. Dixon
4321 Mineralogy IIb - D.D. Hogarth and others

Honours Program

University requirements concerning Honours standing must be maintained. (See pp. 248-251.)

Honours in Geology

1. Courses as prescribed for the Major program are required, except that Geology 67.498 (Thesis) is one of the mandatory courses in Geology, and a course in Mathematics beyond First-year level (which may include Computing Science) is mandatory in the group of six courses required in other sciences.

2. The departmental language requirement must be met during the Third year by passing a formal course in, or demonstrating reading proficiency in a language other than English and preferably French.

Combined Honours in Biology and Geology

Program advisers are K. Hooper and H. F. Howden.

Students desiring a comprehensive basic training in both Biology and Geology may apply for admission to a Combined Honours program, on completion of the First year of the Science program. Applicants must be of Honours standing and must have achieved grades of C- or better in both Biology 61.100 and Geology 67.100.

Course requirements of the Combined Honours program are as below:

1. Biology 61.100, Geology 67.100, Mathematics 69.107*, and 69.117* or 69.127*, Chemistry 65.100 or Physics 75.100 (the course omitted must have been passed at Grade 13 level).

2. Ten courses in Biology (or Biochemistry) and Geology beyond First year level, including at least one course involving a field camp. Not more than six courses in this group should be taken in one department and not more than six may be 200 level courses.

3. Biology 61.498 or Geology 67.498.

4. One half course in Statistics and one half course in Computing Science.

5. Three optional courses, at least two of which must be acceptable in the Faculties of Arts or Social Sciences.

6. A language requirement must be met during the Third year by passing a course in, or demonstrating reading proficiency in one of French, German, Russian, Spanish, Italian, Latin, Greek, or any language acceptable to the Committee and in which suitable arrangements can be made for the examination.

Combined Honours in Physics and Geology

Program advisers are G. Ranalli and T.J.S. Cole.

A Grade of C- or better in both Geology 67.100 and Physics 75.100 and overall Honours standing is required before admittance to the program. Course requirements are as follows:

First Year

- Physics 75.100
Geology 67.100
Mathematics 69.107* and 69.117*
Chemistry 65.100
One Arts or Social Science elective

Second Year

- Physics 75.211*, 75.221*, 75.232* and 75.242*
Geology 67.221*, 67.222*, 67.228* and 67.281*
Mathematics 69.202

Third Year

- Physics 75.300, 75.361* and 75.362*
Geology 67.323*, 67.324* and 67.385
One optional course

Fourth Year

- Physics 75.338*
One half-credit Physics course at the 400 level
Geology 67.481*
One half-credit Geology course at the 400 level
Physics 75.499 or Geology 67.498
One Arts or Social Science elective
One optional course

A reading proficiency in French, German or Russian must be demonstrated in the Third year. Thesis must be presented and defended orally before an interdepartmental committee.

Combined Honours in Chemistry and Geology

Program adviser is G.B. Skippen.

A grade of C- or better in both Chemistry 65.100 and Geology 67.100 and overall Honours standing are required for admittance to the program. Course requirements are as follows:

First Year

Chemistry 65.100
 Geology 67.100
 Mathematics 69.107* and 69.117*
 Physics 75.100
 One Arts or Social Science elective

Second Year

Chemistry 65.210 and 65.250
 Geology 67.221*, 67.222*, 67.228* and 67.281*
 Mathematics 69.202

Third Year

Chemistry 65.350
 Geology 67.323* and 67.324*
 One Chemistry or Geology option
 One Science elective
 One Arts or Social Science elective

Fourth Year

Chemistry 65.498 or Geology 67.498
 One Chemistry course at the 400 level
 One Geology course at the 400 level
 One Science elective
 One open elective

A language requirement must be met during the Third year by passing a course in, or demonstrating reading proficiency in one of French, German or Russian.

Graduate Courses

For information on graduate courses, please consult the Graduate Studies and Research Calendar.

Courses Offered

Geology 67.100 .

General Geology

The Earth as a planet, minerals, rocks, geological structures; resource geology, geological time, the development of the North American continent, the history of life.

Text: Press and Siever, *Earth*.

Reference texts: Gilluly, Waters and Woodford, *Principles of Geology, Fourth Edition*; Peterson, Rigby, and Hintze, *Historical Geology of North America*.

Non-science, non-engineering students who wish to take only one introductory course in geology are encouraged to take 67.111* and 67.112*. Credit will be given for only one of Geology 67.111* and Geology 67.100.

Day division: Lectures two hours a week, tutorial one hour a week, laboratory three hours a week, one or two field excursions during laboratory periods in the First term.

J.A. Donaldson, G.B. Skippen, W.M. Tupper

Evening division: Lectures and laboratory five hours a week, two half day field trips in the First term.

Geology 67.101*

Introductory Geology for Engineers

Fundamentals of geology with emphasis on engineering aspects. This course open only to students in the Engineering Faculty.

Day division, First Term: Lectures two hours a week, laboratory three hours alternate weeks, two field excursions.

W.M. Tupper

Geology 67.111*

Geology, the Environment and Man I

The Earth, man's habitat..Its formation and development. Processes shaping the environment. Earth materials.

Text: Gilluly, Waters, and Woodford, *Principles of Geology, Fourth Edition*.

Day Division, First term: Lectures two hours a week, laboratories, seminars and field trips three hours a week.

P.A. Hill

Geology 67.112*

Geology, the Environment and Man II

Earth resources. Conservation. Urban geology. Water supply. Geological hazards: prediction, prevention. Artificial openings and slopes. Pollution. Trace elements. Reclamation geology.

Prerequisite: Geology 67.100 or 67.101* or 67.111*.

Day division, Second term: Lectures two hours a week, laboratories, seminars and field trips three hours a week.

P.A. Hill

Geology 67.204*

Earth, Resources and Society

The course is designed to enhance the students' appreciation of the resource basis of contemporary society, and to explain the role of the earth sciences in the forecasting and mitigation of natural disasters. The effects of geologic resources and events on the organization of society and on the evolution of international relations are examined. Topics covered in the lectures include: Non-renewable resources and the physical limits of a finite earth; energy, water and the human use of the oceans; earthquake prediction and control; volcanic eruptions; and several case histories. The students have the option to investigate and report on aspects of these problems which relate to their own disciplines.

Prerequisites: Intended for students with at least Second-year standing in the social sciences, humanities, or architecture. Open to Science students, but not as a Science Continuation Course. Not a Science credit for Geology students. First year students may enrol with permission of the Instructor. No previous experience in geology is needed.

Reference Texts: Menard, *Geology, Resources and Society*; Kesler, *Our Finite Mineral Resources*; Bolt et al., *Geological Hazards*.

Evening division, Second term: Lectures and seminars three hours a week.

G. Ranalli

Geology 67.221*

Crystallography and Optical Mineralogy

Morphological study and classification of crystals, principles of optical crystallography.

Prerequisite: Geology 67.100 or 67.112* or 67.101*.

Day division, First term: Lectures two hours a week, tutorial one hour a week, laboratory three hours a week.

G.Y. Chao

Geology 67.222*

Mineralogy

Introduction to crystal chemistry, X-ray techniques, physical mineralogy and systematic mineralogy.

Prerequisite: Geology 67.100 or 67.112* or 67.101* or 67.221*.

Texts: Mason and Berry, *Elements of Mineralogy*; Deer, Howie and Zussman, *Introduction to the Rock-forming Minerals*.

Day division, Second term: Lectures two hours a week, laboratory three hours a week.

G.Y. Chao

Geology 67.228*

Petrology I

Introduction to the origin and classification of rocks. Optical properties of the rock-forming minerals. Petrographic techniques and principles of geochemistry.

Prerequisite: Geology 67.221*.

Texts: Heinrich, *Microscopic Identification of Minerals*; Hyndman, *Petrology of Igneous and Metamorphic Rocks*.

Reference texts: Krauskopf, *Introduction to Geochemistry*; Harker, *Petrology for Students*; Faul, *Ages of Rocks, Planets and Stars*.

Day division, Second term: Lectures two hours a week, tutorial one hour a week, laboratory three hours a week.

K. Bell

Geology 67.233*

Stratigraphy I

Principles of stratigraphy and sedimentology; sedimentary rocks. Geological framework of North America. One or more field excursions.

Prerequisite: Geology 67.100 or 67.112* or permission of the instructor.

Text: Dott and Batten, *Evolution of the Earth* (Second edition).

Reference Text: Krumbein and Sloss, *Stratigraphy and Sedimentation* (Second edition).

Day division, First term: Lectures two hours a week, laboratory three hours a week.

R.W. Yole

Geology 67.234*

Palaeontology I

Principles of Palaeontology and palaeoecology; organic evolution of invertebrates; and vertebrates; human palaeontology.

Prerequisite: Geology 67.100 or 67.112* or permission of the instructor.

Reference text: Black, *The Elements of Palaeontology*.

Day division, Second term: Lectures two hours a week, laboratory three hours a week.

K. Hooper

Geology 67.281*

Field Geology I

Basic geological and geophysical methods applied to the field study of rocks. A mandatory 14-day field camp starting on September 6. Cost of long distance transportation (if applicable) and room and board relating to the field camp are borne by the student.

Prerequisite: Geology 67.100, 67.101* or 67.112*.

Day division, First term: Field camp, plus laboratory three hours a week.

K. Bell, J.A. Donaldson, G.B. Skippen, W.M. Tupper

Geology 67.311*

Applied Environmental Geology

Geology in: land use analysis, urban development, foundation design, highway construction, underground transportation, slope stability, subsidence, reclamation, environmental geochemistry, pollution, waste disposal, flood control, resource use and management, the law.

Prerequisites: Geology 67.100, 67.101* or 67.112*, or permission of the instructor.

Day division, First term: Lectures and laboratories five hours a week.

P.A. Hill and others

Geology 67.323*

Petrology II

Petrology of igneous and metamorphic rocks; one day-long field trip.

Prerequisites: Geology 67.221*, 67.222*, 67.228* and Chemistry 65.100.

Text: Hyndman, *Petrology of Igneous and Metamorphic Rocks*.

Reference texts: Gass et al, *Understanding the Earth*; Verhoogen et al, *The Earth*; Williams, Turner and Gilbert, *Petrography*.

Day division, First term: Lectures two hours a week, laboratory three hours a week.

J.M. Moore

Geology 67.324*

Mineral Deposits

Ore deposits, economic geology, applied geochemistry and groundwater geology. One day-long field trip.

Prerequisites: Geology 67.221*, 67.222*, 67.228* and Chemistry 65.100.

Text: Park and McDiarmid, *Ore Deposits*.

Reference texts: Bates, *Geology of Industrial Rocks and Minerals*; McDiarmid, *Minerals and Men*.

Day division, Second term: Lectures two hours a week, laboratory three hours a week.
W.M. Tupper

Geology 67.333*

Palaeontology II

More advanced treatment of invertebrate fossils; evolutionary palaeoecology; fossil plants.

Prerequisite: Geology 67.234*.

Day division, Second term: Lectures two hours a week, laboratory three hours a week.

K. Hooper

Geology 67.334*

Stratigraphy II

Stratigraphic analysis; sedimentary environments; sedimentary tectonics; systematic historical geology of North America.

Prerequisite: Geology 67.233.

Text: Dott and Batten, *Evolution of the Earth*.

Reference texts: Matthews, *Dynamic Stratigraphy*; Douglas (Ed.), *Geology and Economic Minerals of Canada*.

Day division, First term: Lectures two hours a week, laboratory three hours a week.

R.W. Yole

Geology 67.385

Structure and Geophysics

The geometry of the earth's crust interpreted in the light of mechanical principles of deformation, geodynamics and global geophysics; geophysical fields; structural analysis of metamorphic tectonites; tectonic synthesis.

Prerequisite: Geology 67.281*.

Reference texts: Verhoogen, et al., *The Earth*; Bott, *The Interior of the Earth*; Cox, *Plate Tectonics and Geomagnetic Reversals*.

Day division: Lectures two hours a week, laboratory three hours a week.

R.L. Brown, G. Ranalli

Geology 67.415*

Quaternary Geography

Offered as Geography 45.411*.

First term.

Geology 67.417*

Soil Mechanics

Offered as Engineering 82.424*.

Geology 67.418*

Engineering Geomorphology

Offered as Geography 45.416*.

Second term.

Geology 67.419*

Hydrology

Offered as Engineering 82.331*.

Geology 67.422*

Metallic Mineral Deposits

Ore deposits studied from their relationships to the petrologic cycle. Ore genesis interpreted in light of field studies of local deposits, reflected light microscopy of ore suites, description of classic deposits, phase equilibria and isotopic evidence.

Prerequisite: Geology 67.324*.

Text: Stanton, *Ore Petrology*.

Day division, Second term: Lectures, seminars and laboratories five hours a week.

D.H. Watkinson

Geology 67.423*

Petroleum Geology

The origin and occurrence of oil and natural gas; oil exploration and production; petroleum provinces.

Prerequisite: Geology 67.334*.

Reference text: Levorsen, *Geology of Petroleum, Second Edition*.

Not offered 1977-78.

Geology 67.427*

The Geology and Application of Coal

The origin, structure, petrography and terminology of coal. Coal fields of North America with special reference to Canada. The evaluation, analysis, testing and application of coals. Extraction, utilization and beneficiation. Pollution. Economics.

Prerequisite: Geology 67.334* or permission of the instructor.

Evening division, First term: Combined lectures and laboratory five hours a week.

P.A. Hill, B.W. Nandi (Co-ordinators)

Geology 67.428*

Property Valuation and Mineral Economics

Not offered 1977-78.

Geology 67.431*

Marine Geology and Microfossils

Oceanological and marine geological processes; microorganisms of the oceans; microfossils: their evolution, biostratigraphic and palaeoecologic significance and economic use; microfaunal correlation in petroleum geology. Laboratory: Examination and identification of microfossils. Each student is required to present one seminar paper.

Prerequisites: Geology 67.234* and permission of the instructor.

Reference texts: Cushman, *Foraminifera, their Classification and Economic Use*; Glaessner, *Principles of Micropalaeontology*.

Not offered 1977-78.

Geology 67.442*

Advanced Structure

A study of the structural evolution of mountain belts, with emphasis on field methods.

Prerequisite: Geology 67.385.

Text: Ramsay, *Folding and Fracturing of Rocks*.

Day division, Second term: Lectures, seminars and laboratories five hours a week.

R.L. Brown

Geology 67.451*

Igneous Petrology

Genesis of plutonic and volcanic rocks, their spatial and petrochemical relationships and crust-mantle differentiation; associated problems in phase equilibria and isotopic studies. One-day field trip.

Prerequisite: Geology 67.323*.

Day division, First term: Lectures and laboratory five hours a week.

D.H. Watkinson

Geology 67.452*

Metamorphic Petrology

Field relations of metamorphic rocks; graphical treatment and interpretation of mineral assemblages. Laboratory: Petrographic techniques, study of suites; graphical and numerical problems.

Prerequisite: Geology 67.323*.

Text: Winkler, *Petrogenesis of Metamorphic Rocks*, Fourth Edition.

Reference text: Miyashiro, *Metamorphism and Metamorphic Belts*.

Day division, Second term: Seminars and laboratory five hours a week.

J.M. Moore

Geology 67.463*

Sedimentology

Review of sedimentary processes. Composition, texture, primary structure and origin of the major sedimentary rock types; dispersal patterns, sedimentary trends, and lithofacies. Laboratory: textural analyses, heavy minerals, statistical analysis of data, and thin-section petrography.

Prerequisite: Geology 67.324* or 67.334*.

Text: Selly, *Ancient Sedimentary Environments*.

Reference texts: Milner, *Sedimentary Petrography*; Pettijohn, Potter and Siever, *Sand and Sandstones*; Bathurst, *Carbonate Rocks and their Diagenesis*.

Day division, First term: Lectures and laboratory five hours a week.

J.A. Donaldson

Geology 67.464*

Precambrian Geology

Introduction to problems of the Precambrian, emphasizing both classical and current North American studies. Laboratory: research methods, field trips, petrologic studies of representative rock suites.

Prerequisite: Geology 67.324*.

Reference text: G.S.C. *Geology and Economic minerals of Canada, Fifth Edition*.

Not offered 1977-78.

Geology 67.481*

Physics of the Earth

The physical properties of the solid earth. Gravitational, magnetic and palaeomagnetic fields; seismology and

earthquake occurrence; heat flow and thermal history. Geodynamic processes.

Prerequisites: Geology 67.385 or permission of the instructor.

Text: Jacobs, *A Textbook on Geonomy*.

Reference texts: Cox, *Plate Tectonics and Geomagnetic Reversals*; Strangway, *History of the Earth's Magnetic Field*.

Day division, Second term: Lectures and laboratories five hours a week.

G. Ranalli (*E. Irving on Palaeomagnetism*)

Geology 67.482*

Geochemistry and Isotope Geology

Chemical evolution of the earth, meteoritics, development of the continental crust, origin of the atmosphere and hydrosphere, radiometric dating, stable isotopes, origin of life.

Prerequisite: Geology 67.323* and 67.324* or permission of the instructor.

Texts: Ahrens, *Distribution of the Elements in Our Planet*; Faul, *Ages of Rocks, Planets and Stars*; Hoefs, *Stable Isotope Geochemistry*; Wood, *Meteorites and the Origin of Planets*.

Day division, Second term: Lectures and seminars five hours a week.

K. Bell

Geology 67.483*

Applied Geochemistry

Chemical and physical factors responsible for the distribution and migration of the elements in the lithosphere, hydrosphere, atmosphere and biosphere; geochemistry applied to mineral exploration; methods of analysis. Laboratory: determination of trace amounts of the common metallic elements in soils and stream sediments; case histories, research problems, field trips.

Prerequisites: Geology 67.100 or 67.112*, and 67.228*, Chemistry 65.100.

Text: Levinson, *Introduction to Exploration Geochemistry*.

Reference text: Hawkes and Webb, *Geochemistry in Mineral Exploration*.

Day division, First term: Combined lectures and laboratory five hours a week.

W.M. Tupper

Geology 67.484*

Exploration Geophysics

An introduction to the fundamental theory and application of geophysics to economic and structural geology. Methods studied are electrical, gravitational, magnetic, radioactive and seismic. Case history studies integrate the application of the methods.

Prerequisite: Physics 75.100 or 75.105, or permission of the instructor.

Reference texts: Dobrin, *Introduction to Geophysical Prospecting, Second Edition*; Jakosky, *Exploration Geophysics*; Parasnis, *Principles of Applied Geophysics*.

Day division, Second term: Lectures and laboratory four hours a week.

R.W. Stemp

Geology 67.487*

Field Geology II

This course, a two-week field camp, is designed to develop the student's ability to observe, analyse and interpret geological field data in the light of theoretical and experimental knowledge. A written report including maps, sections and diagrams is to be submitted and defended in an oral examination. Kaladar Area, Grenville Province, May, 1977.

Prerequisite: Completion of the Geology core program or its equivalent.

Day division, First term.

R.L. Brown, J.M. Moore

Geology 67.498

Honours Thesis

The B.Sc. thesis is to be based on a study undertaken before or during the final University year, in the field and/or the Department. Before registering in the course, the student must first have obtained approval from the course co-ordinator, of the topic and a supervisor. The thesis is equivalent to one full course, with an average of eight hours work per week. It shall be defended orally; a final draft suitable for defence shall normally be submitted to the co-ordinator by the deadline for Second term assignments, otherwise the student shall be deemed to have failed the course.

G.Y. Chao (Co-ordinator)

Courses Planned for Summer School and Evening Division, 1977-80

Evening Division 1977-78

67.100, 67.204*, 67.427*.

Summer 1978

67.111*, 67.112*.

Evening Division 1978-79

67.100, 67.204*, 67.423*.

Summer 1979

67.100.

Evening Division, 1979-80

67.111*, 67.112*, 67.204*, 67.427*.

Summer 1980

67.111*, 67.112*.

Members of the Committee

Office: Room 503, Steacie Building

Chairman

To be announced

Committee

K. Bell (*Geology*)
E. Hughes (*Mathematics*)
J. Kelly (*Psychology*)
J. Lambert (*Biology*)
C. Langford (*Chemistry*)
R. Morrison (*Physics*)
J. Neilson (*Engineering*)

General Information

The Committee arranges programs of integrated science studies designed for those students who wish to develop an understanding of Science and at the same time to develop an area of interest in the Humanities, Social Sciences or Engineering. The programs require that students go into an area of Mathematics, Physical Sciences, Environmental Sciences, Behavioural Sciences or Life Sciences to sufficient depth to have an understanding of its workings and significance. In the parallel studies outside the Faculty of Science, patterns of courses must be selected which give the student similar understanding. The Third year includes an interdisciplinary course. The program for each student is developed individually in consultation with the advisers of the Committee who will continue to supervise the progress of the student. An Honours program of integrated science studies is available under the supervision of the Committee. Further information may be obtained from the Chairman.

Course Requirements

First Year

The First year program consists of five courses approved for a First year Science program including (a) Mathematics 69.107*, and 69.117*. For those students whose major Science interests will be in Biology or Geology, Mathematics 69.127* will be acceptable in place of 69.117*; (b) an experimental Science course chosen from Biology, Chemistry, Geology, Physics; (c) an Arts or Social Science elective; (d) two courses from Science, Mathematics, Arts, Social Sciences or Engineering.

In establishing their First year program, students should consult with the Chairman of the Integrated Science Studies program or a member of the committee to ensure that they register for appropriate courses.

Major Program

Although programs are planned and approved on an individual basis, the general framework of regulations is specified. Candidates in integrated science studies programs organized under the committee will ordinarily take a total of fifteen courses, of which at least eight shall be selected from those offered in the Faculty of Science. At least six courses shall be selected above the 100 level in the Faculty of Science, including Integrated Science 60.300 and at least two more courses in the Faculty of Science at the 300 or 400 level. For this purpose, Technology, Society, Environment 59.301 and 59.302 are considered non-Science rather than Science options in this program.

These courses, and their prerequisites, will be designated the Science sequence. The course pattern will also include a non-Science area of at least three courses from outside the Faculty of Science to provide a subsidiary specialization. At least two courses must be selected from the Faculties of Arts or Social Sciences. No more than seven courses are to be selected at the 100 level. Essays or special projects may be required, to be submitted to an adviser or the Chairman of the Committee before April 1 in the Second year.

Honours Program

Programs must meet usual grade point and credit standards for Honours (see p. 251). After First year Science, they must include nine Science courses above First year, including Integrated Science 60.498 (Honours research), Integrated Science 60.300 (seminar in integrated science studies), and four other Science courses from advanced (Third and Fourth year) offerings. Normally, at least one 400-level course apart from 60.498 will be included. These courses will be designated the Science sequence. Additionally, the program must include a pattern of interrelated non-Science courses for a total of four credits.

Computing Science Specialization

One special program area for Integrated Science Studies is a program combining a Science sequence with Computing Science as an area outside the Science Faculty. Science sequences satisfying the Integrated Science Studies requirement may be developed in mathematical fundamentals related to computing or in a combination of Mathematics with Physics or other experimental sciences. The three-course non-Science sequence for the Pass degree or the four-course non-Science sequence for the Honours degree may be taken in the Computing Science program. For a Combined Major in Computing Science, a student must elect an additional Computing Science credit. For a Combined Honours program, a student must elect two additional Computing Science credits. (See p. 401.)

Graduation

To qualify for graduation a student must meet normal Science faculty requirements and have averages of C- or better in *both* the courses of his Science sequence and the courses in his non-Science sequence. Also, the last five courses taken for credit should include at least one from each of the Science and non-Science sequences.

To meet the requirements for the C- average in the Science and non-Science sequences stated above, only those courses in the sequences necessary to make up the required total for graduation need be counted. All obligatory courses must be counted. Students who have a B+ average in the courses counted toward graduation and who are recommended to the Committee will be designated as graduates "with distinction."

Courses Offered

Integrated Science 60.300

Seminar on Selected Topics in Science

Seminars on topics in science and its relation to other human activities will be presented. The First term presents a scientific survey of the evolution of the world, terminating with the emergence of man. The Second term deals with some of the social consequences of science. Each student will work on a project, in consultation with a faculty adviser. This course is required of students in the Third year of this program. Other Science students with advanced standing will be admitted with permission.

Evening division, First and Second terms: Seminars two hours a week, tutorial one hour.

S. Peck

Integrated Science 60.498

Honours Project

A project will be carried out by the student in consultation with a faculty adviser. The project must be approved by the adviser's department and by the Chairman of the Integrated Science Studies program. An adviser and topic for study must be selected and approved by the last date for late registration. The adviser may require a preliminary report by January. Three copies of the final written report shall be prepared and submitted by April 1, one each for the project adviser, an ISS Committee member, and a third reader who will have some familiarity with the project area. The project is the equivalent of one full course, with an average of eight hours of work per week. An "In Progress" grade will not be given for work not meeting the deadlines except in unusual circumstances and with the approval of the ISS Committee chairman. The fulfillment of these requirements is the responsibility of the student.

Interfaculty Courses

Humanities

Humanities 10.100

An examination of selected works, from Biblical times to the present, illustrating the various dominant views on the nature of man and his attempts to understand himself and the world about him.

Prerequisite: First year standing or higher.

Not offered 1977-78.

Humanities 10.200

An examination of selected works illustrating various dominant views on the nature of man and his attempts to understand himself and the world about him in the context of the twentieth century as seen from points of view of history, philosophy, social science and literature.

Prerequisite: Second year standing or higher.

Not offered 1977-78.

Science

Science 60.100

Man and His Environment (for Non-Science Students)

Introductory lectures treat the historical background of science, development of scientific methodology, and what science is and is not. The first half of the First term explores the origin, development, and evolution of the universe, stars, planetary systems, the elements, the earth, biochemicals, and life on earth. The goal is to show where man is in the universe, what he is, and how he came to be, as learned by science. The second half of the First term explores the subjects of evolution and ecology, or the generalizations of how living things live and respond in relationship to other living things, and the non-living environment, without emphasis on man. The Second term explores the activities of man and their ecological consequences, or their impact on the environment. Topics include man's evolution and his use and abuse of land, nature, fire, water, the oceans, air, and wildlife. Pollution topics include water, air, heat, radiation, insecticides, organic and inorganic chemicals and pest species. Lastly are considered human problems of the house, the city, transportation, solid wastes, human population growth characteristics, the growing demand for food, a search for causes (religion, economics, etc.), the limits to growth, the future, and what can be done.

Not offered 1977-78.

Science 60.200*

Introduction to Scientific Computing

Also listed as Computing Science 95.103*. See p. 405.

Science 60.202*

Introduction to Computing Science

Also listed as Computing Science 95.102*. See p. 405.

Science 60.206*

Introduction to Data Processing

Also listed as Computing Science 95.104*. See p. 405.

Other Courses

Computing Science, see p. 401.

Technology, Society and Environment Studies, see p. 412.

St. Patrick's College Interdisciplinary courses, see p. 230.

Department of Mathematics

Officers of Instruction

Chairman

L.D. Nel

Assistant Chairmen

E.J. Norminton (Undergraduate Studies)

B.M. Puttaswamaiah (Graduate Studies)

Professors

P.R. Beesack

M. Csörgö

D.K. Dale

D.A. Dawson

J.D. Dixon

V. Diab

M.S. Macphail

P. Mandl

L.D. Nel

F.H. Northover

J.N.K. Rao

Helga H. Shirmer

W. Schneider

D.W. Sida

K.S. Williams

Associate Professors

M. Chacron

F. Fiala

R.M. Fischler

C.W.L. Garner

J.E. Graham

K. Hardy

A.B.M.L. Kabir

L.E. May

E.J. Norminton

J.N. Pandey

J.C. Poland

I. Pressman

B.M. Puttaswamaiah

M. Rahman

L. Ribes

E. Saleh

A. Smith

P. Tan

G. Zelmer

Assistant Professors

Marianne Helfenstein (*St. Patrick's College*)

E. Hughes

M.J. Moore

Lecturer

Marion J. Watson

Adjunct Professors

S.R. Caradus

M. Grmela

T. Hida

S. Klasa

P. Revesz

Programmer-Analyst

G.H. Choudhry

Course Numbering

Course numbers prefixed by 70 indicate courses intended primarily for Honours students; course numbers prefixed by 71 (with the exception of Mathematics 71.461) indicate courses restricted to elementary or high school teachers of mathematics; all other courses have numbers prefixed by 69. Credit will not be given for two courses having the same number but different prefixes.

Placement in First-Year Mathematics Courses

Teaching sections in First-year Mathematics courses are made up, as far as possible, of homogeneous groups of students. In order to do this, all students wishing to enrol in a First year Mathematics course are given a Placement Test, held either during the registration period or prior to it at times to be announced.

Although all sections of the same course will cover the same syllabus and write a common examination, the depth of coverage will vary from section to section in accordance with the ability of students to profit from it. Students who are unhappy with their initial placement are invited to discuss the matter with the Department. A second test or new placement can be arranged by mutual agreement.

Students for whom the placement test reveals unacceptable weakness in basic skills will be required to complete the pre-calculus half course Mathematics 69.106* in the First term before taking First-year calculus and/or algebra courses in the Second term.

Students for whom the requirement of the pre-calculus course Mathematics 69.106* is waived, will normally make one of the following selections of First-year Mathematics courses:

(a) Mathematics 69.102 and 69.112 (Arts, Social Sciences and Science).

(b) First term: Mathematics 69.107*; Second term: Mathematics 69.127* (Commerce and Economics or other Arts or Social Sciences).

(c) First term: Mathematics 69.107*; Second term: Mathematics 69.117* (Science and Engineering)

(d) First term: Mathematics 69.107*; 69.117*; Second term: Mathematics 69.207*; 69.217* (Arts, Social Sciences and Science)

(e) First term: Mathematics 69.107*, Computing Science 95.103* (Science 60.200*); Second term: Mathematics 69.207* or 69.257*, 69.117* (Science).

Students who have already mastered the material of a course without formally holding credit for it, may apply

to write an Advanced Placement Test in order to be exempted from it.

Major Programs: B.A. and B.Sc. (Mathematics) B.A. and B.Sc. (Mathematical Sciences)

B.A. and B.Sc. (Mathematics)

A total of fifteen courses is required in accordance with the conditions given below. All course selections *must* be approved by the Mathematics Department. In certain cases the Department will permit a student to replace courses listed below by corresponding Honours courses.

Course Requirements

1. *Either* Mathematics 69.102 and 69.112 with an average of C- or better; *or* Mathematics 69.107*, 69.117*, 69.207*, 69.217* with an average grade in 69.107* and 69.117* of B- or better; *or* Mathematics 69.107*, 69.127*, 69.207*, 69.217* with an average grade in 69.107* and 69.127* of B- or better.

2. Mathematics 69.208*, 69.218*, 69.245*, 69.257*.

3. Three full course equivalents in Mathematics selected from the range 69.304* to 69.386*, excluding 69.305* and 69.306*.

With permission of the Department, one or more of these courses may be replaced by a course in the 70 series at the Third-year level or a course at the 400 level, provided that of the total of three courses, not more than two are in the same area.

4. For B.A. Students:

Two courses numbered 200 or higher, chosen from any departments in the Faculties of Arts or Social Sciences.

For B.Sc. Students:

(a) Two Science continuation courses chosen from among those in Biology, Chemistry, Geology, Physics, Computing Science, Geography, Psychology and Technology, Society, Environment. Acceptable courses are listed on page 248. (b) Two Arts or Social Science electives.

5. The remaining courses may be chosen from any department, including Mathematics, subject only to the restriction that of the total of fifteen courses, at least half must be numbered 200 or higher.

B.A. and B.Sc. (Mathematical Sciences)

These programs in Mathematics and Computing Science are designed for students who wish to prepare themselves for a career in government, industry, management, systems analysis, and related fields which employ mathematicians. A total of fifteen courses, including a minimum of eight in Mathematics and Computing Science, is required in accordance with the conditions given below. All course selections must be approved by the Mathematics Department. In certain cases the Department will permit a student to replace courses listed below by corresponding Honours courses.

Although the first two years are common to all, the final year is arranged in *four* streams or areas of specialization from which a student must choose one. The four streams are: (a) Statistics, (b) Operations Research and Stochastic Processes, (c) Dynamical Systems, (d) Computer Mathematics.

Course Requirements

1. *Either* Mathematics 69.102 and 69.112 with an average of C- or better; *or* Mathematics 69.107*, 69.117*, 69.207*, 69.217* with an average grade in Mathematics 69.107* and 69.117* of B- or better; *or* Mathematics 69.107*, 69.127*, 69.207*, 69.217* with an average grade in Mathematics 69.107* and 69.127* of B- or better.

2. (a) Mathematics 69.257*; (b) two half-courses selected from Mathematics 69.208*, 69.218*, 69.245*.

3. Two and a half Mathematics courses at the Third year level. In each stream certain selections must be included, as follows:

Statistics: Mathematics 69.350, 69.351;

Operations Research and Stochastic Processes: Mathematics 69.350, 69.381*, and 70.356*;

Dynamical Systems: Mathematics 69.345*, 69.346* and one of 69.304*, 69.307*, 69.381*;

Computer Mathematics: Mathematics 69.384*, 69.386*, 70.385*.

4. (a) One full course equivalent at Second or Third year level chosen from Mathematics or Computing Science; (b) Two half courses from Computing Science, prefixed 95.

5. For Mathematical Sciences Students in the B.A. Program:

Two courses numbered 200 or higher, chosen from any departments in the Faculties of Arts or Social Sciences.

For Mathematical Sciences Students in the B.Sc. Program:

(a) Two Science Continuation courses chosen from those in Biology, Chemistry, Geology, Physics, Computing Science, Geography, Psychology and Technology, Society, Environment. Acceptable courses are listed on page 248. Computing Science courses already chosen under requirement 4 above may be counted towards this requirement. (b) Two Arts or Social Science electives.

6. The remaining courses may be chosen from any departments, including Mathematics, subject only to the restriction that of the total of fifteen courses, at least half must be numbered 200 or higher.

Combined Major Programs: B.A.

In general, the Mathematics requirements will be the same as those listed under sections 1, 2 and 3 of the B.A. Major program in Mathematics described above, except that the equivalent of only two full courses in 3 will be required instead of three. All such programs must

be arranged in consultation with the Mathematics Department.

Combined Major Programs with Computing Science

Mathematical Sciences and Computing Science

A student in this program will follow the Computer Mathematics stream of the Mathematical Sciences program, and in addition, will take Science Continuation courses consisting of two full, Computing Science courses (see page 401) in addition to the Computing Science courses in the Computer Mathematics program.

Computing Science and Integrated Science Studies

Students in the Science faculty may follow a Combined Major program in Computing Science and Integrated Science Studies which allows more options in Experimental Sciences than the Combined program with Mathematical Sciences. In this program students will select a three-course non-Science sequence from Computing Science. In addition, students will be required to make up from their electives an additional course in Computing Science.

Honours Programs: B.A. Hons. and B.Sc. Hons. (Mathematics); B.A. Hons. and B.Sc. Hons. (Mathematical Sciences)

The Department of Mathematics offers two kinds of programs leading to an Honours degree. One program emphasizes fundamental concepts in mathematics and leads to an Honours degree in Mathematics. This program gives a strong training in pure mathematics with the option of advanced courses in mathematical applications. The other program is "career-oriented" and leads to an Honours degree in Mathematical Sciences. In this program a particular career stream is chosen and courses are concentrated in this area. There is flexibility between the two programs so that even at the end of the Second year a student enrolled in one program can change to the other by addition of at most one course. In each of the programs a total of twenty courses is required.

B.A. Hons. and B.Sc. Hons. (Mathematics)

A total of twenty courses is required in accordance with the conditions given below. All course selections *must* be approved by the Mathematics Department.

Course Requirements

1. *Either* Mathematics 69.102 and 69.112 with an average of C- or better; *or* Mathematics 69.107*, 69.117*, 69.207*, 69.217* with an average grade in 69.107* and 69.117* of B- or better; *or* Mathematics 69.107*, 69.127*, 69.207*, 69.217* with an average grade in 69.107* and 69.127* of B- or better.

2. Mathematics 70.200, 70.210, 70.260.

3. (a) Mathematics 70.301*, 70.302*, 70.307*, 70.310, 70.495*. (b) Three additional half courses in Mathematics prefixed by 70 and numbered 300 or higher. (c) Three additional half courses in Mathematics prefixed by 70 and numbered 400 or higher.

Notes:

(i) it is strongly recommended that both Mathematics 70.301* and 70.302* be taken in the Third year.

(ii) Mathematics 70.495* is the Honours Project in Mathematics. It consists of a written report on some approved topic or topics in the field of Mathematics together with a short lecture on the report. Each student should commence work on his project under a faculty supervisor before June 1 of his Third year. The first draft of this report must be submitted to a supervisor by November 1, and the final draft to the Department by January 15. Students who do not meet this latter deadline will be given the grade *Abs*.

4. For B.A. Honours Students:

Two courses numbered 200 or higher chosen from any department in the Faculties of Arts or Social Sciences.

For B.Sc. Honours Students:

(a) Two Science Continuation courses, chosen from among those in Biology, Chemistry, Geology, Physics, Computing Science, Geography, Psychology and Technology, Society and Environment. Acceptable courses are listed on page 248. (b) Two Arts or Social Science electives.

5. The remaining courses may be chosen from any department, including Mathematics, subject only to the restriction that of the total of twenty courses, not more than seven may be below the 200 level.

B.A. Hons. and B.Sc. Hons. (Mathematical Sciences)

A total of Twenty courses, including a minimum of eleven and a half in Mathematics and Computing Science, is required in accordance with the conditions given below. All course selections must be approved by the Mathematics Department.

Although the first two years are common to all, the final two years are arranged in four streams or areas of specialization from which a student must choose one. The four streams are: (a) Statistics, (b) Operations Research and Stochastic Processes, (c) Dynamical Systems, (d) Computer Mathematics.

Course Requirements

1. *Either* Mathematics 69.102 and 69.112 with an average of C- or better; *or* Mathematics 69.107*, 69.117*, 69.207*, 69.217* with an average grade in Mathematics 69.107* and 69.117* of B- or better; *or* Mathematics 69.107*, 69.127*, 69.207*, 69.217* with an average grade in Mathematics 69.107* and 69.127* of B- or better.

2. Mathematics 70.200, 70.210, 70.260, 69.257*. (Mathematics 70.200 may be replaced by Mathematics 69.208* and 69.309* in cases where Mathematics 69.107* was taken in the First year.)

3. Three Mathematics courses at the 300 level or higher. In each stream, certain selections must be included as follows:

Statistics: Mathematics 70.350, 70.355*, 70.356*, 70.450*, and one half course from the range 70.451* to 70.458*.

Operations Research and Stochastic Processes: Mathematics 69.381*, 70.350, 70.356*, 70.458*, and one half course from the range 70.451* to 70.457*.

Dynamical Systems: Mathematics 70.345*, 70.346*, 70.445*, 70.470*. Two of 69.381*, 70.301*, 70.302*, 70.307*, 70.308*.

Computer Mathematics: Mathematics 69.384*, 69.386*, 70.385*, 70.486*, one of 70.482*, 70.483* or 70.485*.

4. (a) One of Mathematics 70.301*, 70.302*, 70.307*, 70.308*; (b) One half course in Mathematics at 400 level; (c) Honours project Mathematics 70.495*.

5. (a) One half course in Computing Science, prefixed 95, excluding 95.101*. (b) One full course equivalent elected from Computing Science, (95 series) or from Mathematics (70 series or from 69.304*, 69.381*, 69.384*, 69.386*).

6. For Mathematical Sciences Students in the B.A. Honours Program:

Two courses numbered 200 or higher, chosen from any departments in the Faculties of Arts or Social Sciences.

7. For Mathematical Sciences Students in the B.Sc. Honours Program:

(a) Two Science Continuation courses chosen from among those in Biology, Chemistry, Geology, Physics, Computing Science, Geography, Psychology and Technology, Society, Environment. Acceptable courses are listed on page 248. Computing Science courses chosen under requirement 5 above may be counted also towards this requirement; (b) Two Arts or Social Science electives.

Combined Honours Programs: B.A. Hons.

Economics and Mathematics

Course Requirements

At least seven courses in Economics to include Economics 43.100, 43.200, 43.210, one course from category 3, (see Economics categories, page 332), 43.490, 43.499* and one and a half other courses at the 300 level. With permission of the Honours supervisor and the instructor, 43.490 may be replaced by 43.575. Economics 43.420* and 43.421* are strongly recommended.

At least seven courses in Mathematics beyond the first year (if 69.102 and 69.112 or their equivalent were

taken in First year) to include Mathematics 70.200, 70.210, 70.260, 70.301*, 70.302*, 70.350, one course in the 70.300 – 400 series and one course in the 70.400 series.

3. The comprehensive examination in Economics must be completed.

4. Each year's program must be determined in consultation with the two departments.

Mathematics and Philosophy

Course Requirements

1. At least seven courses in Philosophy: an introductory course; 32.205; 32.215; 32.250 or 32.380; 32.335; one of 32.210 or 32.330 or another Philosophy course; one full course or the equivalent at the 400 or 500 level.

2. At least seven courses in Mathematics beyond First year (if 69.102 and 69.112 were taken in First year to include Mathematics 70.200, 70.210, 70.260, 70.301*, 70.302*, 70.310, one course in the 70.300 – 400 series and one course in the 70.400 series.

3. Each year's program must be determined in consultation with the two departments.

Combined Honours Programs with Computing Science

Computing Science and Mathematical Sciences

A student in this program will follow the Computer Mathematics stream of the Mathematical Sciences program and in addition, will take Science Continuation courses consisting of two full courses selected from the core group of Computing Science courses (see page 401) in addition to the Computing Science courses in the Computer Mathematics Program.

Computing Science and Integrated Science Studies

Students in the Science faculty may follow a Combined Honours program in Computing Science and Integrated Science Studies, which allows more options in Experimental Sciences than the Combined program with Mathematical Sciences. In this program, students will select a four-course non-Science sequence from Computing Science. In addition, students will be required to make up from their electives two additional courses in Computing Science.

Other Combined Programs

Other combined honours programs such as German and Mathematics, Geography and Mathematics, are also available. Please consult the Department of Mathematics for full details.

Normally, the following will be required:

Mathematics 69.102 and 69.112 (or their equivalent), 70.200, 70.210, 70.260, two of 70.301*, 70.302*, 70.307*, and three other courses at the 300 level or higher, at least one of which is at the 400 level.

Double Honours Program: B.Sc. Honours

Mathematics and Physics

Entrance Criteria

Successful completion of First year with a B+ or better in Mathematics 69.102, 69.112 and Physics 75.100 or permission of both departments.

Course Requirements

First Year

- (a) Mathematics 69.102, 69.112 or their equivalent;
- (b) Physics 75.100;
- (c) Chemistry 65.100 or Biology 61.100;
- (d) one Arts or Social Sciences elective.

Note: It is highly recommended that Computing Science 95.103* (60.200*) be taken in the First year in addition to the above courses.

Second Year

- (a) Mathematics 70.200, 70.210, 70.260;
- (b) Physics 75.211*, 75.222*, 75.232*, 75.241*;
- (c) one half Arts or Social Sciences elective.

Third Year

- (a) Mathematics 70.301*, 70.302*, 70.310;
- (b) Physics 75.307*, 75.338*, 75.361*, 75.362*;
- (c) Mathematics 70.345* or Physics 75.381*; a half course in Mathematics or Physics at the 300 level; Mathematics 70.307* together with Physics 75.388*, or Physics 75.386.

Fourth Year

- (a) One Mathematics course at the 400 level (or equivalent);
- (b) Physics 75.437*, 75.447*, 75.477*, 75.478*;
- (c) two half courses at the 300 or 400 level in Mathematics or Physics;
- (d) Honours project in Mathematics or Physics (half course);
- (e) one half Arts or Social Sciences elective.

Summary of Major Programs

Three Year Pass Program: B.A. or B.Sc. (Mathematics)*[NOTE: Only Mathematics Requirements are shown.]*

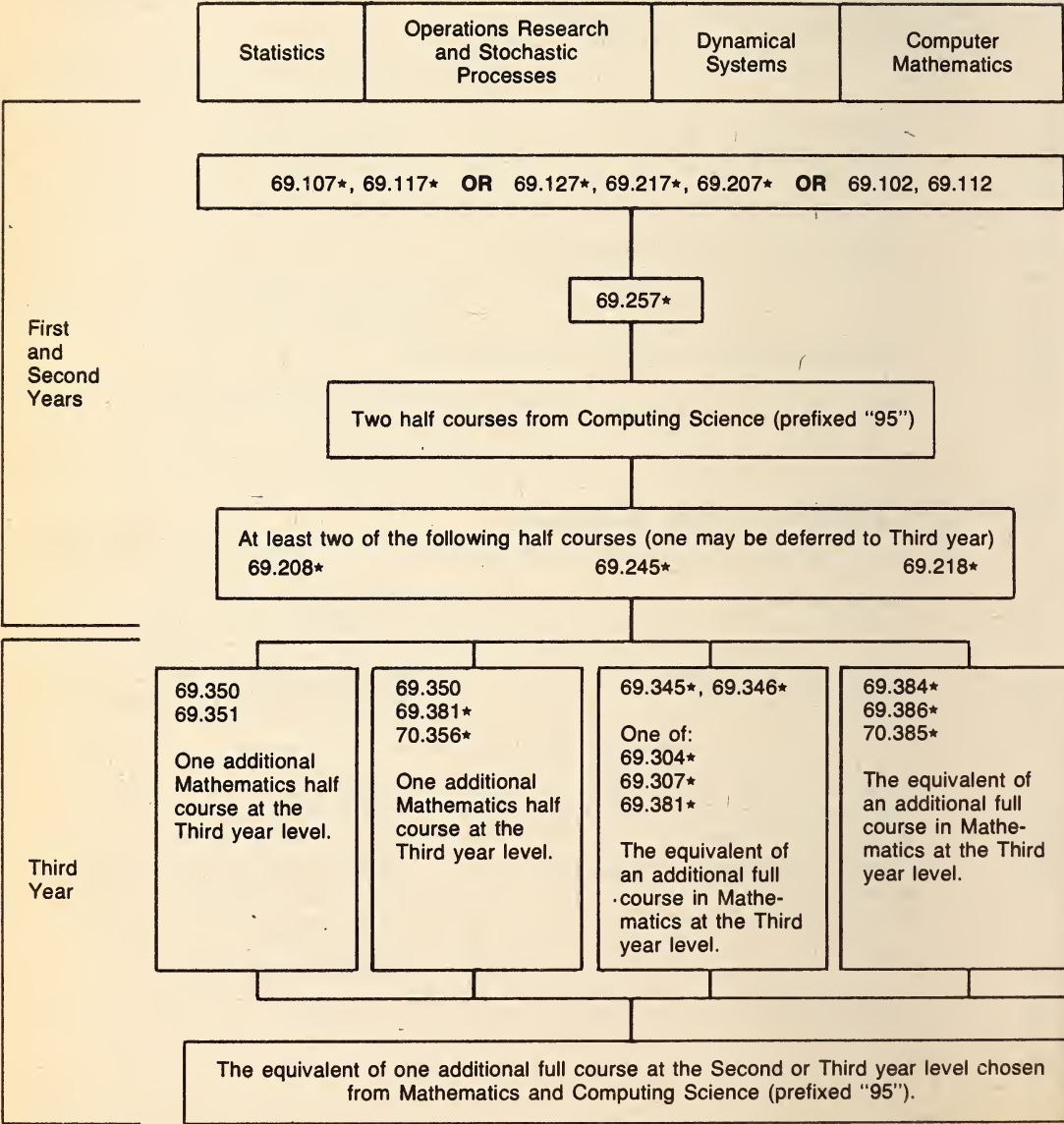
| | | | |
|------------------------|---|----|-------------------|
| First and Second Years | 69.107*, 69.117* (or 69.127*) 69.207*, 69.217* | OR | 69.102 and 69.112 |
| Second Year | 69.208*, 69.218*, 69.245*, 69.257* | | |
| Third Year | Three Mathematics courses at the Third year level | | |

Summary of Honours Programs

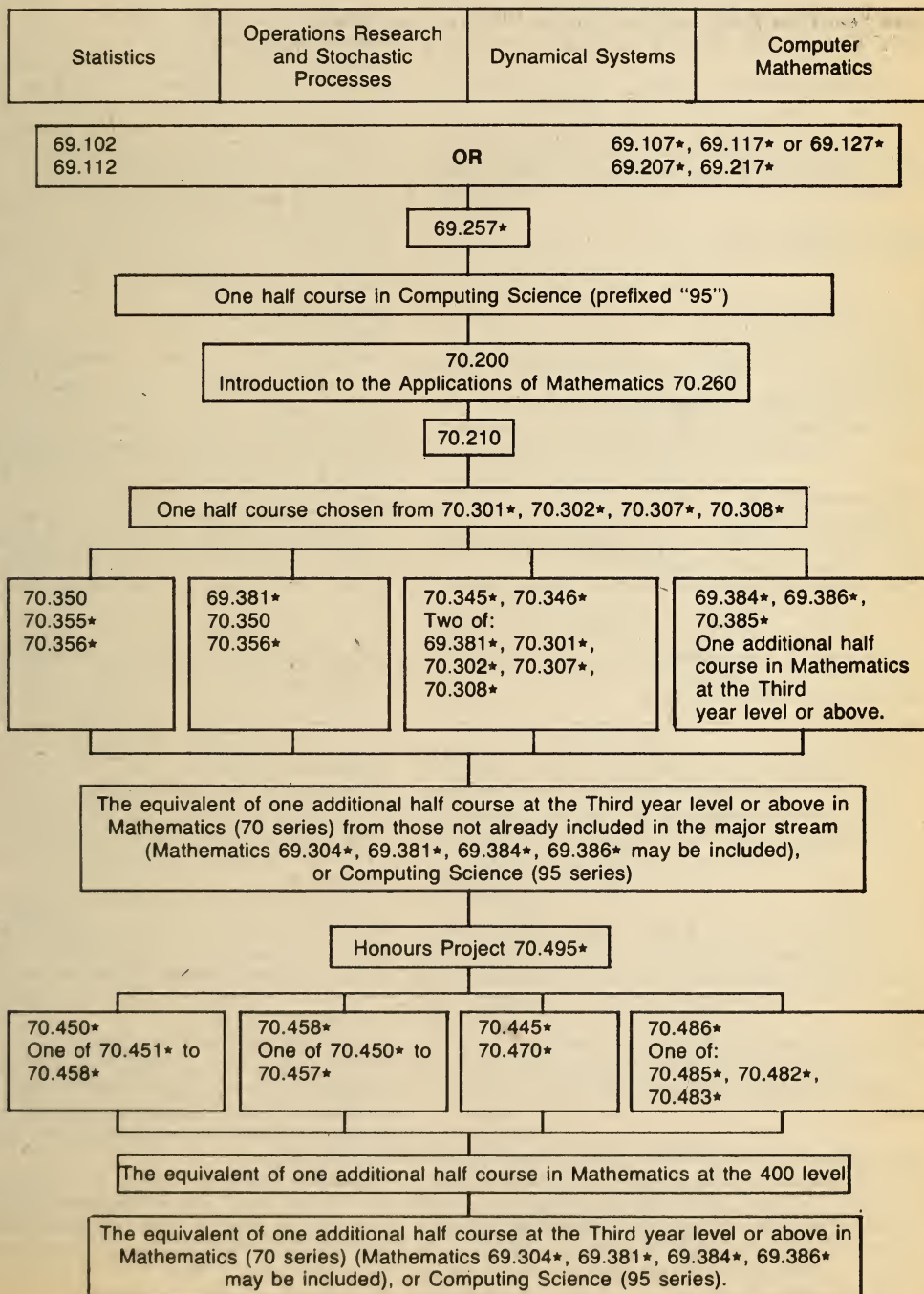
Four Year Honours Program: B.A. or B.Sc. (Mathematics)

| | | |
|------------------------|---|--|
| First Year | 69.102 and 69.112 | 69.107* and 69.117* |
| Second Year | 70.200, 70.210, 70.260 | 69.207*, 69.217* Two of: 70.200, 70.210, 70.260 |
| Third and Fourth Years | 70.301*, 70.302*, 70.307*, 70.310 1½ Mathematics courses (70 series) at the 300 or 400 level 1½ Mathematics courses (70 series) at the 400 level 70.495* Honours Project | Remaining courses from 70.200, 70.210, 70.260. 70.301*, 70.302*, 70.307*, 70.310. 1½ Mathematics courses (70 series) at the 300 or 400 level 1½ Mathematics courses (70 series) at the 400 level 70.495* Honours Project |

Three Year Pass Program: B.A. or B.Sc. (Mathematical Sciences)
[NOTE: Only Mathematics and Computing Science requirements are shown.]



Four Year Honours Program: B.A. or B.Sc. (Mathematical Sciences)

First
and
Second
YearsSecond
or Third
YearThird
YearFourth
Year

Graduate Programs: M.Sc. and Ph.D.

For requirements for graduate degrees, see the Graduate Studies and Research Calendar.

St. Patrick's College Program

The regulations governing the Combined Majors Program in Mathematics are listed under the St. Patrick's College section, p. 213.

Courses Offered

Mathematics 69.006*

Functions and Relations

Functions, conic sections, translations in the plane, trigonometry.

Prerequisites: Grade 12 Mathematics.

Day and Evening divisions, First and Second terms: Lectures three hours a week and one hour tutorial.

Mathematics 69.007*

Introductory Calculus

Sequences, series, limits and continuity, derivatives, anti-derivatives and their applications.

Prerequisites: Mathematics 69.006* or equivalent, or pass in the relevant placement test.

Day and Evening divisions, First and Second terms: Lectures three hours a week and one hour tutorial.

Mathematics 69.102

Calculus

Functions, limits, derivatives, differentiation and applications, the definite integral, special functions, techniques of integration (including partial fractions), parametric equations, improper integrals, l'Hôpital's rules, sequences and series, Taylor's formula and series, differential equations. This course is intended for students who wish to Major or to enter an Honours program in Mathematics.

Prerequisite: Grade 13 Mathematics: Functions and Calculus, and *either* a satisfactory performance in the relevant placement test or Mathematics 69.106*. This course must be taken concurrently with Mathematics 69.112.

Precludes additional credits for Mathematics 69.107*, 69.127*, 69.131*, 69.207* and Architecture 79.101*. Day division: Lectures three hours a week and one hour tutorial.

Mathematics 69.106*

Pre-Calculus Mathematics

Elementary algebra and mathematical logic, exponent rules and logarithms, substitution rules and the concept of function, extensive discussion of linear and quadratic functions, graphs of polynomials and simple rational functions, factor theorem, the circle, trigonometric functions.

Prerequisites: Grade 13 (Functions).

Day and Evening divisions, First and Second terms: Lectures two hours a week and two hours tutorial.

Mathematics 69.107*

Elementary Calculus I

Functions, limits, derivatives, differentiation and applications, special functions, the definite and indefinite integral and techniques of integration.

Prerequisites: Grade 13 Functions and Calculus and *either* a satisfactory performance in the relevant placement test or Mathematics 69.106*.

Precludes additional credits for Mathematics 69.102, 69.131*, and Architecture 79.101*.

Day and Evening divisions, First and Second terms: Lectures three hours a week and two hours tutorial.

Mathematics 69.112

Algebra

Fields, complex numbers, vector algebra and geometry in 2 and 3 dimensions, matrix algebra, linear dependence, bases, linear transformations, bilinear and quadratic forms, inner products, eigenvalues, principal axis theorem. This course is intended for students who wish to Major or enter an Honours program in Mathematics.

Prerequisite: Grade 13 Mathematics: Functions and Calculus and *either* a satisfactory performance in the relevant placement test or Mathematics 69.106*. This course must be taken concurrently with Mathematics 69.102.

Precludes additional credits for Mathematics 69.117*, 69.127*, 69.132*, 69.217* and Architecture 79.201*.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 69.117*

Elementary Algebra

Complex numbers, vector algebra and geometry in two and three dimensions, matrix algebra.

Prerequisites: Grade 13 Functions and Calculus and *either* a satisfactory performance in the relevant placement test, or Mathematics 69.106*.

Precludes additional credits for Mathematics 69.112, 69.127*, 69.132* and Architecture 79.201*.

Day and Evening divisions, First and Second terms: Lectures three hours a week, tutorial two hours a week.

Mathematics 69.127*

Topics in Calculus and Algebra

Vector algebra and geometry in two and three dimensions, matrix algebra. Partial differentiation, elementary differential equations.

Prerequisites: Mathematics 69.107* (may be taken concurrently).

Precludes additional credits for Mathematics 69.112, 69.117*, 69.132*, and Architecture 79.201*.

Day and Evening divisions, First and Second terms: Lectures three hours a week, tutorial two hours a week.

Mathematics 69.131*

Excursions into Mathematics I

Applications of mathematics in visual and architecturally related fields. Topics include proportions, perspective, optimization. Intended for Architecture students, but topics will be of interest to students in Humanities.

Day division, Second term: Lectures three hours a week.

Mathematics 69.132*

Excursions into Mathematics II

An introduction to mathematical reasoning, with particular applications to architecture. Topics include: isometries of the Euclidean plane and three-space; symmetry groups applied to designs, frieze patterns, wallpaper patterns and uniform polyhedra; graph theory used to solve planning problems; perspective and orthogonal projections.

Day division, Second term: Lectures three hours a week, problems one hour.

Mathematics 69.141*

Gambling I

History of gambling. Blackjack, craps, poker, horse-racing, roulette, backgammon, bookmaking and stock market. Detection of methods of cheating. Intended primarily for students *not* majoring in Mathematics.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.142*

Gambling II

A deeper mathematical investigation into some of the topics covered in Mathematics 69.141*, plus the topics of game theory and gamblers' ruin formulas. Statistical methods for detecting cheating. Some discussion also of the psychology and sociology of gambling. Intended primarily for students *not* majoring in Mathematics.

Prerequisites: Grade 13 Mathematics (or equivalent) and Mathematics 69.141*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.201

Intermediate Calculus

Differential calculus of functions of several variables, multiple integration, elements of infinite series, complex numbers, differential equations. Intended for non-Science students.

Prerequisites: Mathematics 69.117* or 69.127* (may be taken concurrently) and 69.107*.

Precludes additional credits for Mathematics 69.202, 69.203, 69.207*, 69.208*, 70.200.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 69.202

Intermediate Mathematics

Partial differentiation, infinite series, multiple integration, differential equations, Fourier series, introduction to matrix and eigenvalue problems. Intended for Science students.

Prerequisite: Mathematics 69.107*, and 69.117* or 69.127*.

Precludes additional credits for Mathematics 69.201, 69.203, 69.207*, 69.208*, 70.200.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 69.203

Intermediate Mathematics

Vectors, functions of two variables, sequences and series, elementary complex variable; ordinary differential equations. Intended for Science students.

Prerequisite: Mathematics 69.107* or permission of the Department.

Precludes additional credits for Mathematics 69.201, 69.202, 69.207*, 69.208*, 70.200.

Not offered 1977-78.

Mathematics 69.207*

Elementary Calculus II

Further techniques of integration, improper integral, polar coordinates, parametric equations, indeterminate forms, sequences and series, Taylor's formula and series, first order and linear differential equations.

Prerequisite: Mathematics 69.107*.

Precludes additional credits for Mathematics 69.102, 69.201, 69.202, 69.203.

Evening division, First term and Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.208*

Intermediate Calculus

Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations, implicit and inverse function theorems.

Prerequisites: Mathematics 69.102, or 69.107* and 69.117* and 69.207*.

Precludes additional credits for Mathematics 69.201, 69.202, 69.203, 70.200.

Day division, First term and Evening division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.217*

Linear Algebra

n-dimensional vector spaces, linear dependence and bases, linear transformations and matrices, bilinear and quadratic forms, inner products, eigenvalues, principal axis theorem.

Prerequisite: Mathematics 69.117*.

Precludes additional credit for Mathematics 69.112.

Day division, First term and Evening division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.218*

Introductory Abstract Algebra

Sets and relations, number theory, group theory, ring theory, cardinal numbers.

Prerequisites: Mathematics 69.112 or 69.217*.

Precludes additional credit for Mathematics 70.210.

Day division, First term and Evening division, Second term.

Mathematics 69.245*

Dynamical Systems I

Introduction to one and two-dimensional Newtonian mechanics of a particle. Conservation laws. Simple harmonic motion and other solvable problems in rectilinear motion. Central forces and general particle motion in a plane. Difference equations and applications to biological systems. Application of differential equations to population problems. Linear programming with applications.

Prerequisites: Mathematics 69.102 and 69.112 (or 69.117* and 69.207*).

Precludes additional credit for Mathematics 70.260.

Day and Evening divisions, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.250

Introduction to Statistical Analysis

Frequency distributions; moments; measures of central tendency; dispersion, skewness; probability; distributions (Binomial, Poisson, Normal, z , t , F , χ^2); statistical inference, confidence intervals; experimental designs (randomized block, Latin square); enumeration statistics; least squares analysis, introduction to correlation and regression analysis; non-parametric tests. (BASIC programming.) Intended for non-Mathematics students. Prerequisites: Mathematics 69.007* and 69.011.

Precludes additional credit for Mathematics 69.257*, 69.258*, 70.260, Economics 43.220, Geography 45.201*, Psychology 49.205*, 49.305, Sociology 53.205.

Day and Evening divisions: Lectures three hours a week and one hour tutorial.

Mathematics 69.257*

Introduction to Statistics

Descriptive statistics: frequency distributions, histograms and ogives, numerical measures of characteristics; introduction to probability theory; mathematical expectation; the binomial hyper-geometric and Poisson probability functions; continuous distributions; properties and applications of the normal, t , χ^2 and F distributions to interval estimation and testing of hypotheses; enumeration statistics; simple linear regression and correlation. (BASIC programming.)

Prerequisites: Mathematics 69.107* and 69.117* or their equivalent. May be taken concurrently.

Precludes additional credits for: Mathematics 69.250, 69.258*, Economics 43.220, Geography 45.201*, Psychology 49.205*, 49.305, Sociology 53.205.

Evening division, First term and Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.258*

Introduction to Statistical Methods

Descriptive methods of distributions; Introduction to probability theory and applications; discrete and continuous probability distributions; point and interval estimation; testing of hypotheses; enumeration statistics and goodness-of-fit tests; simple linear regression and correlation analysis. Use of computer. (BASIC or FORTRAN Programming.)

Prerequisites: Mathematics 69.107* and 69.117* or their equivalent.

Precludes additional credits for: Mathematics 69.250, 69.257*, Economics 43.220, Geography 45.201*, Psychology 49.205*, 49.305, Sociology 53.205.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.304*

Boundary Value Problems

Differential equations; solution in series; the formulation of boundary value problems in mechanics, heat conduction, etc.; the method of separation of variables; eigenfunctions and eigenvalues; Fourier series; Bessel and Legendre functions and applications; Laplace transforms.

Prerequisite: Mathematics 69.201, 69.202, 69.203, or 69.208*.

Precludes additional credits for Mathematics 69.306*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.305*

Functions of a Complex Variable

Analytic functions, contour integration, residues, conformal transformations, Laplace transform. Intended for Engineering students.

Prerequisite: Mathematics 69.201.

Precludes additional credits for Mathematics 69.307*, 70.307*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.306*

Mathematical Methods I

Series solution of ordinary differential equations, solution of partial differential equations of mathematical physics, special functions, Fourier analysis, boundary value problems. Intended for Engineering students.

Prerequisite: Mathematics 69.201.

Precludes additional credits for Mathematics 69.304*, 70.308*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.307*

Functions of a Complex Variable

Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-Engineering students.

Prerequisite: Mathematics 69.201, 69.202, 69.203 or 69.208*.

Precludes additional credits for Mathematics 69.305*, 70.307*.

Evening division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.309*

Topics in Analysis

The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence.

Prerequisite: Mathematics 69.201, 69.202, 69.203 or 69.208*.

Precludes additional credits for Mathematics 70.200.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.310

Modern Algebra

Continuation of the study of semigroups, groups, rings, integral domains, fields, number systems, vector spaces and lattices.

Prerequisite: Mathematics 69.218*.

Precludes additional credit for Mathematics 70.310.

Evening division: Lectures three hours a week and one hour tutorial.

Mathematics 69.325*

Euclidean Geometry and its Groups

Transformations of the Euclidean plane (isometries, similarities); solutions of geometric problems using these transformations; groups of symmetries of finite plane figures, frieze patterns, and regular polyhedra; inversion and the extension to the inversive plane; problems solved using inversion; orthogonal circles and pencils of coaxial circles.

Prerequisite: Mathematics 69.218*.

Not offered 1977-78.

Mathematics 69.326*

Plane Projective Geometry

Axioms of desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; introduction to finite projective planes.

Prerequisite: Mathematics 69.218*

Precludes additional credit for Mathematics 70.326*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.335*

Introduction to the Theory of Numbers

Euclidean algorithm, unique factorization theorem, linear diophantine equations, congruences, Fermat and Wilson theorems, primitive roots, quadratic residues, arithmetic functions, sums of squares, Pell's equation, rational approximation to real numbers.

Prerequisite: Mathematics 69.218*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.345*

Dynamical Systems II

Dynamics of particle-systems; linear and angular momentum; conservation laws; collisions. Rotating axes; motion of a particle near the earth. Two-dimensional rigid body motion; moment of inertia; angular momentum. Euler equations; Lagrange's equations.

Prerequisites: Mathematics 69.208* and 69.245*.

Precludes additional credit for Mathematics 70.345*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.346*

Dynamical Systems III

Further developments of difference and differential equations of linear and dynamic programming and of matrix methods, with applications in biology, economics and other social sciences.

Prerequisites: Mathematics 69.208*, 69.217* and 69.245*.

Precludes additional credit for Mathematics 70.346*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.350

Statistical Theory

Discrete and continuous distributions: moment generating functions, marginal and conditional distributions, transformation theory, limiting distributions; point and interval estimation, hypothesis testing, chi-square tests with enumeration data; linear models.

Prerequisite: Mathematics 69.208* and one of 69.250, 69.257*, 69.258*, Economics 43.220 or permission of the Department.

Precludes additional credit for Mathematics 70.350.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 69.351

Statistical Methods

Statistical preliminaries; simple and multiple regression techniques; correlation analysis; design of experiments including the completely randomized, randomized block, Latin square designs; factorial treatment structures; the analysis of covariance; non-parametric methods, related topics.

Prerequisites: Mathematics 69.257* or 69.258* or an introductory statistics course, together with Mathematics 69.107* and 69.117*.

Precludes additional credits for Mathematics 70.355*, Psychology 49.305.

Evening division: Lectures three hours a week and one hour tutorial.

Mathematics 69.381*

Optimization

Mathematical foundations of model building. Classical optimization. Unconstrained problems. Linear programming, network flow problems, nonlinear programming. Integer programming.

Prerequisites: Mathematics 69.208* (or 69.201), 69.217* and Computing Science 95.103* (60.200*).

Day division, Second term: Lectures three hours a week and laboratory.

Mathematics 69.384*

Information Structures

Introduction to discrete structures; graphs and digraphs; trees, forests, binary trees, and their applications; computer representations of structures; pushdown

stores, lists, and list structures; list processing; sorting and searching techniques; storage of arrays and sparse matrices; storage allocation at execution time; digraphs of programs: (Also listed as Computing Science 95.384*.)

Prerequisites: A Mathematics course numbered 200 or higher, and one of Computing Science 95.201*, 95.204*, 95.207*, which may be taken concurrently. Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.386*

Numerical Analysis

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. (Also listed as Computing Science 95.386*.)

Prerequisites: Computing Science 95.103* (60.200*), Mathematics 69.102 and 69.112, or 69.207* and 69.217*, or 69.201 or 69.202 or 69.203.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 69.387*

Mathematical Software

Incorporation of basic numerical methods into efficient, reliable software. The course will include examination of existing software systems, e.g., linear systems, non-linear systems, optimization, or differential equations. (Also listed as Computing Science 95.387*.)

Prerequisite: Mathematics 69.386* or Computing Science 95.366*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 69.397*

Directed Studies

Available only to students whose program requires a half course equivalent not offered by the Mathematics Department.

■ Mathematics Courses for Honours Students

Mathematics 70.200

Calculus

Real numbers, sequences, infinite series of real or complex constants, limits and continuity, functions of several variables, definite, multiple, line integrals, infinite series of functions.

Prerequisites: Mathematics 69.102 or 69.207*.

Precludes additional credits for Mathematics 69.201, 69.202, 69.203, 69.208*, 69.309*.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 70.210

Algebra

Set theory, algebraic systems, vector spaces, inner product spaces, linear transformations, determinants, quadratic forms, selected applications.

Prerequisites: Mathematics 69.112 or 69.217*.

Precludes additional credit for Mathematics 69.218*.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 70.260

Introduction to the Applications of Mathematics

Mathematical foundations of model building, linear programming, models, differential models and introduction to the mathematical foundations of classical mechanics, discrete probability models, linear statistical models, game theoretic models, statistical decisions and tests of hypothesis. Applications in a variety of fields.

Prerequisites: Mathematics 69.102 and 69.112 or 69.207* and 69.217*.

Precludes additional credits for: Mathematics 69.245*, 69.250, Economics 43.220, Psychology 49.205*, 49.305, Sociology 53.205.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 70.297*

Directed Studies

Available only to students whose program requires a half course equivalent not offered by the Mathematics Department.

Mathematics 70.301*

Real Analysis I

Metric spaces; limits, continuity, open and closed sets, connectedness, bounded and compact sets, complete spaces. Riemann integration, improper integrals.

Prerequisite: Mathematics 70.200 or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.302*

Real Analysis II

Convergence and uniform convergence of sequences of functions. Introduction to Lebesgue integration and Fourier series. Some famous theorems of analysis, e.g., Weierstrass' approximation theorem, Picard's theorem or Arzela's theorem.

Prerequisite: Mathematics 70.200 or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.307*

Functions of a Complex Variable

Analytic functions, contour integration, residue calculus, conformal mapping.

Prerequisite: Mathematics 70.200, or permission of the Department.

Precludes additional credits for Mathematics 69.305*, 69.307*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.308***Theory of Ordinary Differential Equations**

Linear differential equations, systems of linear first order equations, adjoints and integrating factors, the Cauchy problem, analytic differential equations, existence theory, regular singular point theory, Sturm-Liouville theory.

Prerequisites: Mathematics 70.200, 70.301*, 70.302*, 70.307*. May be taken concurrently.

Precludes additional credit for Mathematics 69.306*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.310**Modern Algebra**

Groups, rings, lattices, Boolean algebras, integral domains, fields, polynomial rings, Field theory, Advanced matrix algebra, Jordan canonical form, simultaneous diagonalization, Hermitian forms.

Prerequisite: Mathematics 70.210, or permission of the Department.

Precludes additional credit for Mathematics 69.310.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 70.326***Foundations of Projective Geometry**

Definition of a general projective plane and immediate consequences; finite planes (combinatorial results, sub-planes, incidence matrices), and planar ternary rings; collineations, role of Desargues' configuration, examples of types of planes.

Prerequisite: Mathematics 70.210.

Precludes additional credit for Mathematics 69.326*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.336***Elements of Set Theory**

Informal treatment of the axioms of set theory. Development of the systems of natural numbers, integers, rational numbers, and real numbers using both Dedekind sections and Cauchy sequences based on Peano's axioms. The axiom of choice, Zorn's lemma, well-ordering. The Schroder-Bernstein theorem, cardinal numbers, ordinal numbers, transfinite induction, cardinal and ordinal arithmetics.

Prerequisite: Mathematics 70.210, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.345***Dynamical Systems II**

Dynamics of particle-systems; linear and angular momentum; conservation laws; collisions. Kinematics of a rigid body; moments and products of inertia; angular momentum; two-dimensional rigid body motion. Moving axes. Generalized coordinates; Lagrange's equations; small oscillations and stability.

Prerequisites: Mathematics 70.200 and 70.260.

Precludes additional credit for Mathematics 69.345*.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.346***Dynamical Systems III**

Basic concepts of dynamical systems (physical and biological). Stability of dynamical systems. Diffusion processes. Introduction to statistical mechanics with applications to biological systems. Introduction to population genetics.

Prerequisites: Mathematics 70.200 and 70.260.

Precludes additional credit for Mathematics 69.346*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.350**Mathematical Statistics**

Random variables and moment generating functions; concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics, empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses; robustness, nonparametric methods.

Prerequisites: Mathematics 70.200, 70.210 and 70.260, or permission of the Department.

Precludes additional credit for Mathematics 69.350.

Day division: Lectures three hours a week and one hour tutorial.

Mathematics 70.355***Analysis of Variance Techniques**

Linear statistical models and the method of least squares. Role of randomization in experimental designs. Theory and analysis of the completely randomized, randomized block and Latin square designs; subsampling designs and relative efficiency comparisons, orthogonal contrasts and multiple comparison techniques. Factorial experiments, split plot designs.

Prerequisites: Mathematics 69.217*, 69.350 or 70.350 (which may be taken concurrently); or permission of the Department.

Precludes additional credits for Mathematics 69.351.

Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.356***Introduction to Stochastic Processes**

Recurrent events, Markov chains, Poisson processes, elements of Brownian motion and Kolmogorov-Chapman equations.

Prerequisites: Mathematics 70.200 and 70.260, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.385*

Discrete Structures and Applications

Algebraic structures; lattices, Boolean algebra; elements of the theory of directed and undirected graphs; combinatorics; Polya theory of enumeration, languages over an alphabet, switching circuits, optimization and complete design, algebraic codes, flow charts, connectivity, minimal paths. (Also listed as Computing Science 95.385*.)

Prerequisites: Mathematics 69.218* or 70.210.

Day division, Second term: Lectures three hours a week and one hour tutorial.

■ A selection of courses in the 400 series will be offered.

Mathematics 70.401*

Vector Calculus

Linear transformations, multiple integrals, differential forms, vector functions and fields, vector calculus applications.

Prerequisites: Mathematics 70.301* or permission of the Department.

Mathematics 70.403*

Functional Analysis

Metric spaces, Baire's Category theorem, contraction mappings and applications; Banach spaces, subspaces and product spaces; continuous linear functionals, the dual space; Banach spaces of continuous functions, Stone-Weierstrass theorem, equicontinuity and Ascoli's theorem; Banach spaces of bounded linear operators, uniform boundedness, open mapping, bounded inverse and closed graph theorems.

Prerequisites: Mathematics 70.301* and 70.302* or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.407*

Measure Theory

Measure theory and integration of real-valued functions.

Prerequisite: Mathematics 70.302*, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.415*

Rings and Modules

Fundamental concepts in rings and modules, structure theorems, applications.

Prerequisite: Mathematics 70.310, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.416*

Group Theory

Fundamental principles as applied to abelian, nilpotent, solvable, free, and finite groups; representations.

Prerequisite: Mathematics 70.310, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.417*

Commutative Algebra

Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.

Prerequisite: Mathematics 70.310, or permission of the Department.

Mathematics 70.418*

Homological Algebra and Category Theory

Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory.

Prerequisite: Mathematics 70.310, or permission of the Department.

Not offered 1977-1978.

Mathematics 70.425*

Introduction to General Topology

Topological spaces, maps, subspaces, product and identification topologies, separation axioms, compactness, connectedness.

Prerequisite: Mathematics 70.301*, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.426*

Introduction to Algebraic Topology

An introduction into homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds.

Prerequisites: Mathematics 70.310 and 70.425*, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.427*

Foundations of Geometry

A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.

Prerequisite: Mathematics 70.310 (may be taken concurrently), or permission of the Department.

No offered 1977-78

Mathematics 70.428*

Differential Geometry

Tensor algebra; differentiable manifolds; classical curve and surface theory; connections, Riemannian geometry, geodesics.

Prerequisite: Mathematics 70.301*, or permission of the Department.

Not offered 1977-78.

Mathematics 70.435*

Analytic Number Theory

Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms.

Prerequisite: Mathematics 70.307* or permission of the Department.

Not offered 1977-78.

Mathematics 70.436*

Algebraic Number Theory

Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number.

Prerequisite: Mathematics 70.310 (may be taken concurrently), or permission of the Department.

Mathematics 70.445*

Analytical Dynamics

Lagrange's equations, small oscillations, rigid dynamics in three dimensions, motion of top, introduction to Hamiltonian mechanics.

Prerequisites: Mathematics 70.345* and 70.346*, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.446*

Hydrodynamics and Elasticity

Properties of Cartesian Tensors; fundamental laws; motion of fluids (perfect and viscous); elastic materials.

Prerequisites: Mathematics 70.307*, 70.345* and 70.346*, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.447*

Tensor Analysis and Relativity Theory

Development of tensor analysis, application to Riemannian spaces and relativity theory.

Prerequisites: Mathematics 70.345* and 70.346*, or permission of the Department.

Not offered 1977-78.

Mathematics 70.450*

Parametric Estimation

Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency, and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators.

Prerequisite: Mathematics 70.350, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.451*

Probability Theory

Introduction to probability, characteristic functions, probability distributions, limit theorems.

Prerequisites: Mathematics 70.301* and 70.350, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.452*

Sampling: Theory and Methods I

Basic concepts in sampling from finite population; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.

Prerequisite: Mathematics 70.350, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.453*

Regression Analysis

Discussion of notions of statistical relationship; simple linear regression including estimation, tests of hypotheses, transformation and some applications; multiple linear regression including polynomial regression, orthogonal functions, harmonic analysis and multiple and partial correlation; selected topics in non-linear regression, discriminant analysis and stepwise regression.

Prerequisite: Mathematics 70.350, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.456*

Non-Parametric Methods I

Order statistics; rank statistics; permutations; uniform distribution over the space of permutations; distribution of linear rank statistics; approximate normality of linear rank statistics; hypothesis of randomness; stochastic ordering; Wilcoxon test, median tests, Van Der Waerden test, Kolmogorov-Smirnov test; hypothesis of symmetry and random blocks; hypothesis of independence; treatment of ties; power and efficiency of rank tests.

Prerequisite: Mathematics 70.350, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.457*

Testing of Hypotheses

Confidence interval, fiducial interval, Bayesian interval, most powerful test, uniformly most powerful test, power function, minimal sufficiency, complete statistic, similar regions, unbiased test, likelihood ratio test.

Prerequisite: Mathematics 70.450*, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.458*

Stochastic Models

Markov chains, fields and processes, Analytical methods, simulation and approximation methods, inference and decision problems. Stochastic models arising in the physical, biological, social information, management and systems science.

Prerequisite: Mathematics 70.350 and 70.356* or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.470*

Introduction to Partial Differential Equations

First order linear, quasi-linear, and nonlinear equations; second order equations in two and more variables; systems of equations; the wave equation; Laplace's and Poisson's equations; Dirichlet and Neumann problems; Green's functions.

Prerequisites: Mathematics 70.302*, or 70.307* and 70.308*, or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.471*

Selected Topics in Partial Differential Equations

Theory of distributions, initial-value problems based on 2-dimensions wave equations, Laplace transform, Fourier integral transform, diffusion problems, Helmholtz equation with application to boundary and initial-value problems in cylindrical and spherical coordinates.

Prerequisite: Mathematics 70.470*, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.472*

Integral Transforms

Laplace, Fourier, Hankel and Mellin transforms, selection of a suitable transform for a given partial differential equation boundary value problem. Operational properties of transforms. Inversion theorems. Approximate evaluation of inversion integrals for small and large values of parameter. Application to the solution of integral equations.

Prerequisite: Mathematics 70.307*, or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.473*

Qualitative Theory of Ordinary Differential Equations

Ordinary differential equations: existence-uniqueness theorems, vector formulation for systems; stability theory, Lyapunov theorems, perturbation theorems and structural stability; Poincaré-Bendixon theory.

Prerequisites: Mathematics 70.301*, 70.308*.

Not offered 1977-78.

Mathematics 70.476*

Special Functions

Gamma, Hypergeometric, Bessel and Legendre functions. Introduction to asymptotic methods.

Prerequisite: Mathematics 70.307*, or permission of the Department.

Not offered 1977-78.

Mathematics 70.482*

Introduction to Mathematical Logic

Symbolic Logic, propositional and predicate calculi, set theory and model theory, completeness.

Prerequisite: Mathematics 70.210, or permission of the Department.

Mathematics 70.483*

Topics in Applied Logic

Recursive Functions and computability, algorithms, Church's thesis, Turing machines, computational logic. (Also listed as Computing Science 95.483*.)

Prerequisite: Mathematics 70.210 or 70.385* or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.485*

Theory of Automata

Algebraic structure of sequential machines, decomposition of machines; finite automata, formal languages; complexity. (Also listed as Computing Science 95.485*.)

Prerequisite: Mathematics 70.210 or 70.385* or permission of the Department.

Day division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.486*

Numerical Analysis

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas.

Prerequisite: Permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

Mathematics 70.487*

Game Theory

Two-person zero-sum games; infinite games; multi-stage games; differential games; utility theory; two-person general-sum games; bargaining problem; n-person games; games with a continuum of players.

Prerequisite: Mathematics 70.301*, or permission of the Department.

Evening division, First term: Lectures three hours a week and one hour tutorial.

Mathematics 70.495***Honours Project**

Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report.

Prerequisite: Honours Mathematics students only.

Mathematics 70.496***Directed Studies**

Prerequisite: Honours Mathematics students only.
First and Second terms.

Mathematics 70.497***Directed Studies**

Available only to students whose program requires a half course not offered by the Mathematics Department.

■ **Courses Offered for Elementary and High School Teachers**

The courses Mathematics 71.461, 71.462, 71.463, 71.464, and 71.465 have been approved by the Faculty of Education, Queen's University, as courses leading to a Type A Certificate in Mathematics.

Mathematics 71.266***Mathematics of the Elementary Years**

Sets, relations, mappings, theory of numbers, algebra, geometry. This course will explore the important mathematical ideas of the elementary school curriculum and their interrelationships. Classroom experiences of the participants will be discussed.

Prerequisite: Open to teachers of elementary school Mathematics.

Not offered 1977-1978.

Mathematics 71.366***Posing and Solving Mathematical Problems**

A careful analysis of how mathematical problems are formulated and solved. An examination of a number of famous mathematical problems and their solutions. Introduction to the theory of games.

Prerequisite: Open to teachers of high school Mathematics.

Not offered 1977-1978.

Mathematics 71.367***Real Analysis**

Real numbers, topology of the line and plane, metric spaces, limits, continuity, integration and differentiation. This course will stress the underlying concepts of calculus, and the pedagogical problems of their insertion into the curriculum.

Prerequisite: Open to teachers of high school Mathematics.

Not offered 1977-1978.

Mathematics 71.461**History of Mathematics**

The course will study the historical development of various ideas in mathematics. Problems will be solved in the context of the mathematics discussed.

Prerequisites: Open to all students who have completed the equivalent of the first two years of a Mathematics Major program at Carleton, subject to the approval of the Mathematics Department.

Evening division: Lectures three hours a week.

Mathematics 71.462**Applications of Differential Equations**

Systems of ordinary differential equations (linear and non-linear) with applications to dynamics, chemistry, mathematical biology, and sociology. Partial differential equations of the first and second order with applications to dynamics, nuclear physics, and other fields.

Prerequisite: Students must be qualified high school teachers of Mathematics, with at least a Type B Teaching Certificate and at least the equivalent of a Carleton Major degree in Mathematics.

Not offered 1977-1978.

Mathematics 71.463**Applications of Algebra**

A selection of topics in algebra from: Boolean algebra, group theory, field theory, linear algebra, with applications.

Prerequisite: As for Mathematics 71.462.

Not offered 1977-1978.

Mathematics 71.464**Computing Science and Numerical Analysis**

Introduction to computer languages and program writing; approximating solutions of polynomial and other equations, interpolation; systems of linear equations, matrix inversion, numerical solution of difference and differential equations.

Prerequisite: As for Mathematics 71.462.

Not offered 1977-1978.

Mathematics 71.465**Probability, Statistics and Operations Research**

Various concepts of probability, the concept of independence, normality, statistics from an "organic" viewpoint, Markov chains, elementary queueing models, theory of games.

Prerequisite: As for Mathematics 71.462.

Offered Summer, 1977 Evening Division.

Courses Planned for Summer School and Evening Division, 1977-1981

Summer 1977*

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.201, 69.207*, 69.217*, 69.245*, 69.257*, 69.304*, 69.309*, 69.310, 69.350 and 71.465.

Evening Division 1977-78

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.207*, 69.208*, 69.217*, 69.218*, 69.257*, 69.307*, 69.310, 69.351, 70.487* and 71.461.

Summer 1978*

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.201, 69.207*, 69.217*, 69.245*, 69.257*, 69.307*

69.309*. One of 69.325*, 69.326*, 69.335*, 69.386*, 71.462.

Evening Division 1978-79

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.207*, 69.208*, 69.217*, 69.257*, 69.304*, 69.351, 71.463.

*Summer 1979**

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.201, 69.207*, 69.217*, 69.245*, 69.257*, 69.309*, 69.350, 71.464.

Evening Division 1979-80

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.207*, 69.208*, 69.217*, 69.218*, 69.257*, 69.307*, 69.350, 71.465.

*Summer, 1980**

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.201, 69.207*, 69.217*, 69.245*, 69.257*, 69.309*, 69.310, 69.350, 71.461.

Evening Division 1980-81

69.006*, 69.007*, 69.106*, 69.107*, 69.117*, 69.127*, 69.207*, 69.208*, 69.217*, 69.218*, 69.257*, 69.304*, 69.351, 71.462.

* Timetabling may preclude the taking of both 69.310 and 69.350 or two of 69.207*, 69.245*, 69.201 in any particular summer.

Officers of Instruction

Chairman

R.L. Clarke

Professors

R.L. Clarke

D. Kessler

G.R. Love

M.K. Sundaresan

J.L. Wolfson

Visiting Professor

G. Herzberg

Associate Professors

R.D. Barton

D.J. Brown

R.K. Carnegie

A.L. Carter

T.J.S. Cole

L. Copley

K.W. Edwards

J.E. Hardy

R. Morrison

L. Resnick

W.J. Romo

Instructors

J.-G. Boutin

D. Menagh

P.J.S. Watson

Adjunct Professors

A.J. Alcock

C.K. Hargrove

E.P. Hincks

Sessional Lecturers

L. Avery

H. Inhaber

I. Reichstein

General Information

Students taking a single course in Physics should take Physics 75.010 or 75.105. Students taking more than one course in Physics should take Physics 75.100.

Prerequisites for entry into Second year courses are normally Physics 75.100, and Mathematics 69.107*, and 69.117* or 69.127*. Mathematics 69.102 and 69.112 may be taken instead. Subject to the recommendation of the Major department and the approval of the Physics Department, other combinations of one of Physics 75.100 and 75.105 and Mathematics may be offered. Prerequisites for the Third year courses will normally be Physics 75.211*, 75.222*, 75.231* and 75.242*.

Part-time students are accepted in the Department. Such students should consult with the Department for full details of the available programs.

Major Program

Typical pattern (normal departmental requirements):

First Year

Physics 75.100

Chemistry 65.100

Mathematics 69.107* and 69.117*

Biology 61.100 or 61.101 or Geology 67.100

One Arts or Social Science course

Second Year

Physics 75.211*, 75.222*, 75.231*, 75.242*

Mathematics 69.207* and 69.208*, 69.217*

One of Mathematics 69.258* or Science 60.200*

One Arts or Social Science course or a free option

Third Year

Physics 75.307* or 75.308*

Physics 75.361*, 75.362*, 75.338*

Mathematics 69.305*, 69.306* (or 69.307*, 69.308*)

Plus equivalent of *one* full course to be chosen from:
Substitution of Physics 75.300 for 75.307* or 75.308*;

Engineering 97.357*;

Engineering 94.366* or Mathematics 69.386*;

Physics 75.381*;

One Arts or Social Science course or a free option

At least one Arts or Social Science course must be taken either in Second or Third year

Honours Programs

Honours in Physics

In the Experimental and Theoretical Physics options mentioned below, during the vacation between Third year and Fourth year, students are required to familiarize themselves with a specialized topic; they will deliver a talk on that subject during Fourth year. A comprehensive examination (one course credit) is given in physics and related mathematics, and the student must submit a thesis on his work carried out in Physics 75.497*, 75.498* or 75.499. The fulfillment of the requirements stated in this paragraph is the responsibility of the student.

Honours in Physics – Experimental Options

Typical pattern (normal departmental requirements):

First Year

As for Physics Major Course, or with Mathematics 69.107* and 69.117*, and Geology 67.100 or Biology 61.100 in the Physics Major Course replaced by Mathematics 69.102, 69.112

Second Year

Physics 75.211*, 75.222*, 75.231*, 75.242*
 Mathematics 69.207* and 69.208* and 69.217* (if
 Mathematics 69.107* and 69.117* taken in First year);
 or
 Mathematics 69.208* and 69.218* and one half course
 free option (if Mathematics 69.102 and 69.112 taken in
 First year)
 Mathematics 69.258* or Science 60.200*
 One Arts or Social Science course or a free option

Third Year

Physics 75.300, 75.338*, 75.361*, 75.362*, 75.381*
 and 75.386
 One Arts or Social Science course or a free option
 At least one Arts or Social Science course must be
 taken in Second or Third year

Fourth Year, Option 1

Physics 75.437*, 75.477*, 75.478*
 Physics 75.400 (students taking courses with laborato-
 ries associated with them from other Departments will
 be allowed to register in Physics 75.407* or 75.408*
 instead of in 75.400)
 Physics 75.458* or 75.462* or 75.468*
 Physics 75.499 or 75.497* or 75.498*
 Plus sufficient approved Physics and/or Mathematics
 options to raise the total to five courses.

Fourth Year, Option 2

Physics 75.437*, 75.477*
 Physics 75.400 (students taking courses with laborato-
 ries associated with them from other Departments will
 be allowed to register in Physics 75.407* or 75.408*
 instead of in 75.400)
 Physics 75.428* or 75.458* or 75.481* or 75.421* or
 75.422*
 Physics 75.499 or 75.497* or 75.498*
 Plus sufficient approved Physics and/or Mathematics
 options to raise the total to five courses

Honours in Physics – Theoretical Option

First Year

Physics 75.100
 Chemistry 65.100
 Mathematics 69.102, 69.112
 One Social Science or Arts course

Second Year

Physics 75.211*, 75.222*, 75.231*, 75.242*
 Mathematics 69.208*, 69.218*
 One of Mathematics 69.258* or Science 60.200*
 One Arts or Social Science course or a free option
 One half-course free option

Third Year

Physics 75.307* or 75.308*
 Physics 75.338*, 75.361*, 75.362*, 75.381*, 75.386
 One of Engineering 94.366* or Mathematics 69.386*
 One Arts or Social Science course or a free option
 At least one Arts or Social Science course must be
 taken either in Second or Third year.

Fourth Year

Physics 75.407* or 75.408*
 Physics 75.437*, 75.447*, 75.477*, 75.478*
 Physics 75.497* or 75.498* or 75.499
 Plus sufficient approved Physics and/or Mathematics
 options to raise the total to five courses.

Combined Honours in Geology and Physics

Program Advisers are G. Ranalli and T.J.S. Cole

A grade of C- or better in both Geology 67.100 and
 Physics 75.100, and overall Honours standing are
 required before admittance to the program.

Course requirements are as follows:

First Year

Physics 75.100
 Geology 67.100
 Mathematics 69.107* and 69.117*
 Chemistry 65.100
 One Arts or Social Science course

Second Year

Physics 75.211*, 75.222*, 75.231*, 75.242*
 Geology 67.221*, 67.222*, 67.228*, 67.281*
 Mathematics 69.202
 Field camp

Third Year

Physics 75.300, 75.361*, 75.362*
 Geology 67.325, 67.385
 One free option
 Optional field camp

A reading proficiency in Russian, German or French
 must be demonstrated in the Third year. (Potential
 graduates in 1977-78 shall have satisfied the language
 requirement in either department.)

Fourth Year

Physics 75.338*
 One half-credit Physics course at the 400 level
 Geology 67.481*
 One half-credit Geology course at the 400 level
 Physics 75.499 or Geology 67.498
 One free option
 One Arts or Social Science course

A thesis shall be presented and defended orally before
 the Interdepartmental Committee.

Double Honours Program: B.Sc. Honours**Mathematics and Physics***Entrance criteria*

Successful completion of First year with a B+ or better in Mathematics 69.102, 69.112 and Physics 75.100 or permission of both departments.

*Course requirements**First Year*

- (a) Mathematics 69.102, 69.112
- (b) Physics 75.100
- (c) Chemistry 65.100 or Biology 61.100
- (d) One Arts or Social Science elective.

Note:

It is highly recommended that Science 60.200 be taken in the First year in addition to the above courses.

Second Year

- (a) Mathematics 70.200, 70.210, 70.260
- (b) Physics 75.211*, 75.222*, 75.231*, 75.242*
- (c) One half Arts or Social Science elective.

Third Year

- (a) Mathematics 70.301*, 70.302*, 70.310
 - (b) Physics 75.307*, 75.338*, 75.361*, 75.362*
 - (c) One half Arts or Social Science elective.
- Mathematics or Physics course at the 300 level; Mathematics 70.307* together with Physics 75.388*, or Physics 75.386.

Fourth Year

- (a) One Mathematics course at the 400 level (or equivalent)
- (b) Physics 75.437*, 75.447*, 75.477*, 75.478*
- (c) Two half courses at the 300 or 400 level in Mathematics or Physics
- (d) Honours project in Mathematics or Physics (half course)
- (e) One half Arts or Social Science elective.

Language

Candidates for the degree of Bachelor of Science with Honours in Physics or Combined Honours in Mathematics and Physics or Geology and Physics must show a reading knowledge of French, German, or Russian. Requests for examination should be submitted to the Chairman of the Department by February 15. Application for examination is the responsibility of the student.

Graduate Program

Candidates for the Doctor's and Master's degrees are accepted for full-time work in Physics under the supervision of members of the Department. The requirements and general regulations are given in the Graduate Studies and Research Calendar.

Courses Offered**Physics 75.010****Pre-University Physics**

Day division: Lectures three hours a week, laboratory, demonstrations and problems three hours a week.

Physics 75.100**Introductory Physics**

This course introduces mechanics, the properties of matter, thermodynamics, electricity and magnetism, wave motion, optics, acoustics and some modern topics. A balance is maintained between depth and range.

Prerequisites: Mathematics 69.006* and 69.007* or equivalent, Physics 75.010, or permission of the Department. Science students may be concurrently registered in Mathematics 69.107*.

Day and Evening divisions: Lectures three hours a week, laboratory three hours a week.

Physics 75.105**Introductory Physics**

An alternate First year course for students who lack the prerequisite for Physics 75.100 or who intend to take their major work in a department not requiring Physics 75.100.

Prerequisite: Mathematics 69.006* and 69.007* or equivalent.

Day division: Lectures three hours a week, laboratory three hours a week.

Physics 75.120**Elementary Astronomy for Science and Engineering Students**

A survey course in astronomy, astrophysics and cosmology, giving a descriptive treatment of the known stellar, galactic and extra-galactic systems. A review of the modern ideas concerning the structure, origin and evolution of the universe. Fields of current interest in astronomy, including the study of quasars, pulsars and supernovae will be discussed. Additional topics include the development of space age astronomy and studies of the possible existence of extraterrestrial life. A 10-inch telescope is available for student use. Some of the lectures may be given with Physics 75.190. For students of Science and Engineering.

Prerequisite or co-requisite: Physics 75.100 or Physics 75.105 or Science 60.110.

Evening division: Two one-and-a-half hour lectures a week.

Physics 75.190

Introduction to Astronomy

A survey course in astronomy, astrophysics and cosmology, giving a descriptive treatment of the known stellar, galactic and extra-galactic systems. A review of the modern ideas concerning the structure, origin and evolution of the universe. Fields of current interest in astronomy, including the study of quasars, pulsars and supernovae will be discussed. Additional topics include the development of space age astronomy and studies of the possible existence of extraterrestrial life. A 10-inch telescope is available for student use.

Evening division: Two one-and-a half hour lectures a week.

Physics 75.195

Physics of Music

The physics of musical phenomena. Sound production, propagation, frequency, intensity. Characteristics of musical sounds, pitch, harmonics, attack. Musical instruments, qualities and behaviours, organ, piano, strings, brass, etc. The ear, physiology, behaviour, limitations. Building acoustics. Electronic recording, reproduction and production of music. Primarily for non-Science Majors and Honours.

Prerequisites: Permission of the Department. Some knowledge of either music and musical notation, or elementary physics is desirable.

Lectures three hours a week.

Physics 75.211*

Mechanics and Properties of Matter

Classical mechanics of a particle and rigid body. Classical properties of matter. Relativistic mechanics.

Prerequisites: Physics 75.100, Mathematics 69.107*, and 69.117* or 69.127* or Mathematics 69.102 and 69.112. (Physics 75.105 is also acceptable provided a minimum grade of B- is obtained.)

Text: Kittel, Knight and Ruderman, *Mechanics*.

Day division, First term: Lectures three hours a week, laboratory three hours a week.

Physics 75.222* (75.221*)

Wave Motion and Optics

Physical optics based on electromagnetic theory, oscillator model for dispersion, absorption, scattering, Huygen's principle, reflection and transmission as coherent scattering. Interference, coherence length, diffraction, polarization, double refraction. Geometrical optics.

Prerequisites: Physics 75.100, Mathematics 69.107*, and 69.117* or 69.127* or Mathematics 69.102 and 69.112. (Physics 75.105 is also acceptable provided a minimum grade of B- is obtained.)

Day division, Second term: Lectures three hours a week, laboratory three hours a week.

Evening division, Second term: Two one-and-a-half hour lectures a week, laboratory three hours a week.

Physics 75.230

Electricity and Magnetism

The theory of electric and magnetic fields, and electromagnetism and electromagnetic induction are covered in some detail. D.C. and A.C. circuit theory is presented together with a brief introduction to conduction in solid conductors, semiconductors and insulators. Solid state and vacuum devices are discussed. Examples of interest to students of biology, chemistry and geology as well as to students of physics are stressed. The laboratory deals primarily with electrical measurement.

Prerequisites: Physics 75.100, Mathematics 69.107*, and 69.117* or 69.127* or Mathematics 69.102 and 69.112. (Physics 75.105 is also acceptable provided a minimum grade of B- is obtained.)

Texts: Kipp, *Electricity and Magnetism, Revised Edition: Laboratory Instructions for Physics 75.230*.

Day division: Lectures three hours a week, laboratory three hours a week.

Physics 75.231* (75.232*)

Electricity and Magnetism

Electrostatics, dielectric materials, electrostatic energy, electrostatic instruments. Steady currents and properties of electrical conductors, conductivity. Magnetic effects of currents and moving charges, magnetostatics. Electromagnetic induction and varying currents. Magnetic materials and magnetic measurements. Direct current measurements. Alternating current theory and measurements. Resonant circuits. Systems of units.

Prerequisites: Physics 75.100, Mathematics 69.107*, and 69.117* or 69.127* or Mathematics 69.102 and 69.112. (Physics 75.105 is also acceptable provided a minimum grade of B- is obtained.)

Day division, Second term: Lectures three hours a week, laboratory three hours a week.

Evening division, First term: Two one-and-a-half hour lectures a week, laboratory three hours a week.

Physics 75.233*

Electricity and Magnetism for Engineering Students

Electrostatics, fields and potentials, magnetic fields, electromagnetic induction.

Prerequisites: Science 60.110 and Mathematics 69.107* and 69.117*.

Day division, First term: Lectures three hours a week, laboratory three hours a week.

Physics 75.242*

Heat and Thermodynamics

Heat and kinetic theory, method of thermodynamics and application of laws of thermodynamics.

Prerequisites: Physics 75.100, Mathematics 69.107*, and 69.117* or 69.127* or Mathematics 69.102 and 69.112. (Physics 75.105 is also acceptable provided a minimum grade of B- is obtained.)

Day division, Second term: Lectures three hours a week, laboratory three hours a week.

Physics 75.291*

Physics of the Environment I

This course is concerned with how physics can be used to measure environmental pollution and eventually control it. It is based on examples from recent scientific articles. Introduction of quantitative measures of the environment. Mechanical examples such as the super-flywheel for storing energy are discussed; sound and noise pollution and its evaluation, identification methods based on spectroscopy and other optical methods.

Prerequisite: Physics 75.100, 75.105, Science 60.110 or permission of the Department.

Evening division, First term: Lectures three hours a week.

Physics 75.292*

Physics of the Environment II

This course can either be taken as a continuation of Physics 75.291* or independently. It carries forward the study of the relationship of physical principles to environmental problems. Topics such as radiation and atomic physics; electricity and magnetism in evaluating the environment; the role of thermal pollution. Energy and its environmental aspects.

Prerequisite: Physics 75.100, 75.105, Science 60.110 or permission of the Department.

Evening division, Second term: Lectures three hours a week.

Physics 75.300

Third Year Laboratory

The student is expected to complete a small number of projects. These are closely supervised at the beginning of the year, but the student is encouraged to become as independent as possible. Some of the fields for which apparatus is available are: physical optics, optical spectroscopy, electronics, digital techniques, nuclear spectroscopy, cosmic rays, microwaves, solid state phenomena, electrical measurements.

Laboratory Techniques: Basic technical operations (mechanical, electronics, etc.) used in the design and construction of research apparatus. Students with satisfactory competence in shop techniques may be excused this part of the course.

Prerequisite: Permission of the Department.

Day division: Laboratory and seminar six hours a week, workshop three hours a week.

Physics 75.301*

Advanced Physics Laboratory for Non-Physics Science Students

This course is designed to initiate the student into the use of instrumentation and help him understand the physical principles involved in making key measurements. In consultation with an adviser from the student's Major department, the instructor of this course will endeavour to design the program to meet the needs of each student. Available apparatus as in Physics 75.300.

Prerequisite: Permission of the Department.

Day and Evening division, First term: Laboratory and seminar six hours a week.

Physics 75.302*

Advanced Physics Laboratory for Non-Physics Science Students

This course is designed to initiate the student into the use of instrumentation and help him understand the physical principles involved in making key measurements. In consultation with an adviser from the student's Major department, the instructor of this course will endeavour to design the program to meet the needs of each student. Available apparatus as in Physics 75.300.

Prerequisite: Permission of the Department.

Day and Evening divisions, Second term: Laboratory and seminar six hours a week.

Physics 75.307*

Selected Experiments from Physics 75.300

Prerequisite: Permission of the Department.

Day and Evening divisions, First term: Laboratory and seminar six hours.

Physics 75.308*

Selected Experiments from Physics 75.300

Prerequisite: Permission of the Department.

Day and Evening divisions, Second term: Laboratory and seminar six hours a week.

Physics 75.338*

Electromagnetism

Vector notation, vector algebra, divergence and Stokes' theorems, the Laplacian. Electrostatic field and magnetostatics. Examples involving Laplace's and Poisson's equations; vector potential; Faraday's laws of induction; Maxwell's equations. Propagation of plane electromagnetic waves in vacuum and dielectric media.

Prerequisite: Physics 75.231* or permission of the Department.

Text: Lorrain and Corson, *Electromagnetic Fields and Waves*, Second Edition.

Day division, Second term: Three hours a week.

Physics 75.361*

Modern Physics

The course is designed to provide a logical transition from classical to modern physics. Elements of special relativity. Kinetic theory of gases; determination of the mass and charge of subatomic particles. Rutherford scattering, atomic models. Failure of classical mechanics. Photoelectric effect and Compton scattering. Bohr's theory of the hydrogen atom. Atomic energy states, optical and x-ray spectra. X-ray scattering and diffraction. Elements of nuclear physics and particle physics.

Prerequisites: Physics 75.211*, 75.222*, 75.231*, 75.242*, Mathematics 69.207*, 69.208*, 69.217* or Mathematics 69.202 or 69.203 and 69.217*, or permission of the Department.

Evening division, First term: Lectures three hours a week.

Physics 75.362*

Elements of Quantum Mechanics

Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles.

Prerequisite: Physics 75.361*, or permission of the Department.

Evening division, Second term: Lectures three hours a week.

Physics 75.364*

Modern Physics

This course is designed primarily for Engineering students and for students not Majoring in Physics. Rapid review of Classical physics; special relativity. Particle aspects of electromagnetic radiation. Wave aspects of material particles. Atomic structure. Production of x-rays and x-ray spectra. Molecular binding, solid state physics; nuclear physics. Applications; fission and fusion reactors, coherent optics (lasers, etc.), and semi-conductors. Brief description of cosmic rays and elementary particle physics.

Prerequisites: Physics 75.233* and Mathematics 69.201 for Engineering students, or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.381*

Mathematical Physics I

Vector calculus; curvilinear coordinates; irrotational, solenoidal vector fields; theorems of Gauss, Stokes; introductory fluid mechanics. Introduction to Lagrangian and Hamiltonian mechanics; Poisson brackets, tensors and dyadics; rigid body rotations; coupled systems and normal coordinates; relativistic dynamics.

Prerequisites: Physics 75.211*, 75.242*, 75.221*, 75.232*, Mathematics 69.207*, 69.208*, 69.217*; or permission of the Department.

Day division, First term: Lectures three hours a week.

Physics 75.386

Introduction to Theoretical Physics

Theoretical techniques common to all branches of modern physics will be introduced. Particular emphasis will be placed on methods used in quantum mechanics with problems selected from wave propagation, electromagnetic theory, scattering theory and reactor physics. These will include Fourier series and integrals, elementary generalized functions, contour integration, residue calculus, Fourier and Laplace transforms, methods for solving linear ordinary and partial differential equations, and Green's functions.

Prerequisite: Physics 75.211*, 75.221*, 75.232*, 75.242; Mathematics 69.207*, 69.208*, 69.217*; or permission of the Department.

Day division: Lectures three hours a week.

Physics 75.388*

Mathematical Physics II

Linear differential equations of second order. Fourier series and integrals, elementary generalized functions; Fourier and Laplace transforms; Green's functions, with applications; boundary value problems.

Prerequisites: Physics 75.381* or Mathematics 69.345 or 70.345 (may be taken concurrently); Mathematics 69.307*; or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.400

Fourth Year Laboratory

The student is expected to complete detailed projects involving some original planning both in concept and experimental technique. Projects are similar to Physics 75.300 but are of a more sophisticated nature.

Prerequisite: Physics 75.300 or 75.307* or 75.308*.

Day division: Laboratory and seminar six hours a week.

Physics 75.407*

Selected Experiments from Physics 75.400

Prerequisite: Physics 75.300 or 75.307* or 75.308*.

Day division, First term: Laboratory and seminar six hours a week.

Physics 75.408*

Selected Experiments from Physics 75.400

Prerequisite: Physics 75.300 or 75.307* or 75.308*.

Day division, Second term: Laboratory and seminar six hours a week.

Physics 75.421*

Astronomy and Astrophysics

Introduction to stellar astronomy, binary stars, stellar atmospheres, variable stars, stellar structure, stellar evolution, introduction to radio astronomy, interstellar matter and gaseous nebulae, supernovae and pulsars, galactic structure, quasars, cosmology.

Prerequisites: Physics 75.361* and 75.362*, or permission of the Department.

Evening division, First term: Lectures three hours a week.

Physics 75.422*

Space Physics

Magnetic fields in cosmic physics, induced electric fields; motion of charged particles in electric and magnetic fields; hydromagnetic waves; experimental techniques for space physics; solar physics; structure and physics of the upper atmosphere; the geomagnetic field, aurora and geomagnetic storms; interaction of solar wind with magnetic fields; trapped radiation zones; cosmic rays in space.

Prerequisite: Physics 75.437*, or permission of the Department.

Not offered 1977-78.

Physics 75.428

Modern Optics

Diffraction theory, coherence, Fourier optics, spatial filtering; holography and its applications; laser theory: stimulated emission, cavity optics, modes; gain and bandwidth; design and characteristics of atomic and molecular gas lasers. Some sections of this course will be given in common with Engineering 97.582*.
Prerequisites: Physics 75.361* and 75.362*, or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.437*

Electromagnetic Radiation

Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases; reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields.

Prerequisites: Physics 75.388*, 75.381* and 75.386 (except for Mathematics and Physics Combined Honours students), or permission of the Department.

Text: Lorrain and Corson, *Electromagnetic Fields and Waves*.

Day division, First term: Lectures three hours a week.

Physics 75.447*

Statistical Physics

Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications.

Prerequisites: Physics 75.361*, 75.362*, and 75.477* to be taken concurrently; or permission of the Department.

Day division, First term: Lectures three hours a week.

Physics 75.457*

Ionization and Breakdown in Gases

Review of kinetic theory and atomic structure; elastic and inelastic collisions; charged particles in gases at low and high E/p ; amplification and quenching mechanisms. Instrumentation applications. Breakdown mechanisms; experimental methods. Coronas. Propagation of electromagnetic waves in a plasma. Plasma oscillations. Problems in plasma physics.

Prerequisites: Physics 75.361* and 75.338*, or permission of the Department.

Not offered 1977-78.

Physics 75.458*

Solid State Physics

An introduction to solid state physics. Topics to include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity.
Prerequisites: Physics 75.361* and 75.362* or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.462*

Particle Physics

Description of properties of elementary particles; pions, kaons and baryons. Conservation laws, invariance principles and quantum numbers. Resonances observed in final state interactions. Three body phase space; Dalitz plot. SU_3 symmetry scheme for classifying elementary particles, mass formulae and electromagnetic mass differences. Weak interactions; decay of neutral kaons; CP violation in neutral K decays.

Prerequisite: Physics 75.477*, or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.468*

Nuclear Physics

Ground state properties of nuclei, nuclear forces, nuclear levels. Qualitative treatment of Fermi gas model, liquid drop model, shell model and collective model. Alpha, beta and gamma radioactivities. Fission. Passage of particles through matter. Particle detectors. Elements of neutron physics and nuclear reactors.

Prerequisites: Physics 75.361* and 75.362*; or permission of the Department.

Day division, Second term: Lectures three hours a week.

Physics 75.477*

Introduction to Quantum Mechanics I

This course concentrates mainly on the basic interpretative postulates of quantum mechanics. These fundamental concepts are applied to simple one dimensional problems, and angular momentum theory.

Prerequisites: Physics 75.362*, 75.386, or permission of the Department.

Text: E. Merzbacher, *Quantum Mechanics*.

Day division, First term: Lectures three hours a week.

Physics 75.478*

Introduction to Quantum Mechanics II

Scattering theory and application; bound state problems; approximation methods.

Prerequisite: Physics 75.477*, or permission of the Department.

Text: E. Merzbacher, *Quantum Mechanics*.

Day division, Second term: Lectures three hours a week.

Physics 75.481*

Diffusion and Flow Phenomena

Brief review of orthogonal coordinate systems; divergence, Laplacian etc., in various coordinate systems; continuity equation; flow equations (heat, current, neutrons); diffusion of thermal neutrons (collisional energy transfer, scattering probability, statistical energy degradation); Fermi age-velocity theory; fast neutron flow equation; thermal multiplication pile; criticality criteria; solutions of flow and continuity equations: heat flow (various geometries and boundary conditions), neutron flow (moderation by graphite block.) Also given as Physics 75.553* (Reactor Physics I).

Prerequisites: Physics 75.381*, 75.386, or permission of the Department.

First term: Lectures three hours a week.

Physics 75.497*

Fourth Year Project

Same as Physics 75.499 except that it extends over the First term only.

Prerequisite: Permission of the Department.

Day division, First term: A minimum of six hours laboratory or private study a week.

Physics 75.498*

Fourth Year Project

Same as Physics 75.499 except that it extends over the Second term only.

Prerequisite: Permission of the Department.

Day division, Second term: A minimum of six hours laboratory or private study a week.

Physics 75.499

Fourth Year Project

These are advanced projects of an experimental or theoretical nature with an orientation towards research. The presentation of a thesis is required; the fulfilment of this requirement is the responsibility of the student.

Prerequisite: Permission of the Department.

Day division: A minimum of six hours laboratory or private study a week.

Courses Planned for Summer School and Evening Division, 1977-79

Summer 1977

75.010, 75.100, 75.190.

Evening Division 1977-78

75.100, 75.120, 75.190, 75.222*, 75.231*, 75.301*, 75.302*, 75.307*, 75.308*, 75.361*, 75.338*.

Summer 1978

75.010, 75.100, 75.190.

Evening Division 1978-79

75.100, 75.120, 75.190, 75.211*, 75.242*, 75.301*, 75.302*, 75.307*, 75.308*, 75.362*.

B.Sc. Honours in Psychology

The Department of Psychology offers a program leading to the Honours Bachelor of Science degree. Full details of the Department's offerings may be found in the Faculty of Social Sciences section of the calendar beginning on page 372. Required courses for the B.Sc. with Honours in Psychology, in the sequence which it is strongly suggested they be taken, are as follows:

First Year

1. Mathematics 69.107* and 69.117* or 69.127* (or equivalent prerequisites for 69.250 or for 69.217* and 69.257*/69.258*);
2. One of Biology 61.100 or 61.101, Chemistry 65.100, Physics 75.100 or 75.105;
3. Psychology 49.100 as the Social Science elective;
4. Two additional credits from Science, Social Science or Arts.

Required courses beyond First year, and the sequence in which it is strongly suggested they be taken, are as follows:

Second Year

1. Psychology 49.200*, 49.220*, 49.250*, and 49.270*;
2. Mathematics 69.250 (or 69.217* and either 69.258* or 69.257* for students planning to take further courses in Mathematics);
3. A course in Arts or Social Sciences other than Psychology;
4. Optional course.

Note:

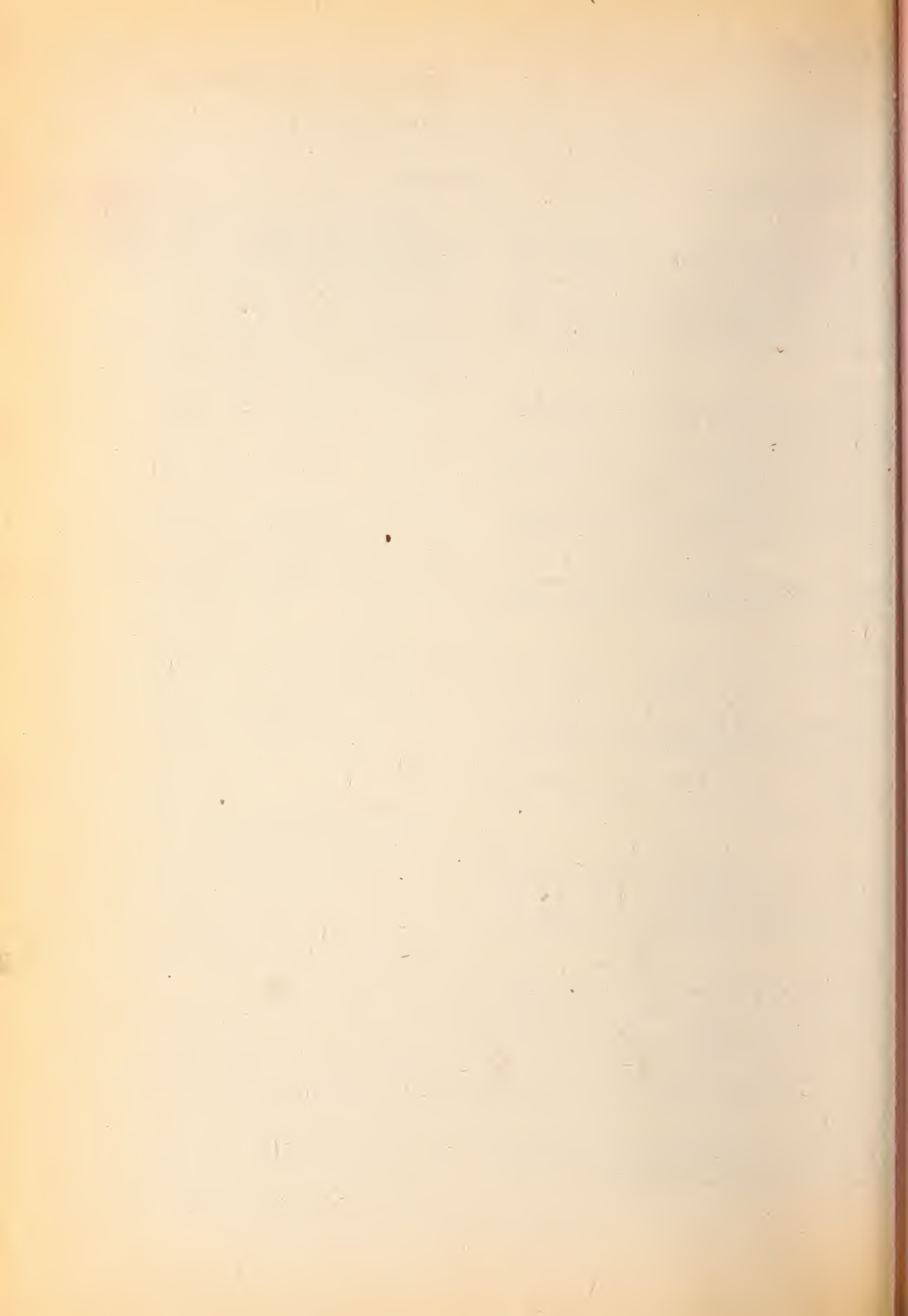
Students who wish to substitute Psychology 49.305 in 2 must offer in 4 a course above the First year level in Biology, Mathematics, Chemistry or Physics chosen with the approval of the Department of Psychology.

Third Year

1. One Honours seminar sequence credit (Psychology 49.325, 49.355* and 49.356*, or 49.375* and 49.376*);
2. One of Psychology 49.201*, 49.202* and 49.204* and one of Psychology 49.300* -303*;
3. One optional credit in Psychology;
4. A course credit in Arts or Social Sciences other than Psychology.
5. A course credit above the First year level in Biology, Mathematics, Chemistry or Physics chosen with the approval of the Department of Psychology.

Fourth Year

1. Psychology 49.498;
2. One credit in Psychology chosen from the following Science continuation courses: 49.221*, 49.222*, 49.251*, 49.252*, 49.255*, 49.256*, 49.271*, 49.321*, 49.327*, 49.330*, 49.331*, 49.380*;
3. One optional credit in Psychology;
4. One course credit above the First year level in Biology, Mathematics, Chemistry or Physics.
5. One optional credit.



Faculty of Social Sciences

Officers of the Faculty

Dean
I.A. Wendt, B350 Loeb Building

Assistant to the Dean
To be announced

Faculty Registrar
To be announced

Directory of Departments and Schools Offering Courses

Accounting, See Commerce
Anthropology, See Sociology/Anthropology
Biology, 583 Tory Building, 231-3871
Commerce, 3A64 Paterson Hall, 231-4373
Economics, C871 Loeb Building, 231-4377
Geography, B340 Loeb Building, 231-6636
International Affairs*, 330 Paterson Hall, 231-2693
Law, D587 Loeb Building, 231-6669
Mathematics, 712 Arts Tower, 231-5500
Political Science, B640 Loeb Building, 231-2697
Psychology, B552 Loeb Building, 231-3636
Public Administration, 927 Arts Tower, 231-6360
Sociology and Anthropology, D794 Loeb Building, 231-6650
Soviet and East European Studies, 261 Paterson Hall, 231-2711

* Graduate level degree program only. For details please see Graduate Studies and Research Calendar.

Faculty Registrars' Offices

Arts and Social Sciences, 312 Paterson Hall
Science, 212 Herzberg Building
Engineering, Architecture, Industrial Design, 353 MacKenzie
St. Patrick's College, 346 St. Patrick's College
Graduate Studies and Research, 215 Paterson Hall

Registrar's Office, Arts and Social Sciences, 312 Paterson Hall, 231-6690

Faculty Registrar
To be announced

Records Officers/Counsellors
Social Sciences: To be announced
Arts: To be announced

The Faculty Registrar's Office is responsible for maintaining the permanent record of every student registered in an undergraduate Faculty of Social Sciences program. All changes affecting a student's registration are processed through this office: course and section changes, degree program changes, changes of Major or Honours program, applications for letters of permission for transfer of credit, applications for graduation, review of grades, etc. Failure to consult or inform this office in all matters affecting a student's registration can result in serious inconveniences and academic and/or financial penalty to the student.

Academic counselling is provided through the Faculty Registrar's Office. Students who have questions regarding University and Faculty regulations should arrange an appointment with a counsellor at 312 Paterson Hall (telephone 231-7407). Problems specifically related to the student's Major or Honours program should be addressed to the department concerned.

Appeals of academic regulations are submitted in writing to the Committee on Admission and Appeals through the Faculty Registrar's Office. Students are encouraged to discuss their appeals with a counsellor or with the Faculty Registrar.

Degree Programs

The Faculty of Social Sciences offers three degree programs.

The Bachelor of Arts three-year Major program is designed to provide the opportunity for a liberal education including specialization in one subject of study called the "Major". A Combined Major program in two subjects may be taken with the consent of the departments concerned.

The four-year program leading to the degree of Bachelor of Arts with Honours is designed for students who wish more rigorous and extensive studies in their chosen discipline. Combined Honours programs are offered in a number of areas. The Honours degree is essential as a qualification in certain fields of employment and is a most desirable preparation for those intending to pursue graduate studies or professional training. Students who are considering high school teaching as a career are urged to consider the Honours degree.

The four-year Bachelor of Commerce degree offered by the School of Commerce provides a foundation in the disciplines essential to careers in business.

One non-degree program is offered in the Faculty of Social Sciences: The School of Public Administration Certificate in Public Service Studies.

Part-Time Studies

All students in the Faculty of Social Sciences are eligible to register on a part-time basis in either Day or Evening courses in the Winter or Summer sessions. In some programs, however, it is not possible to fulfill the degree requirements solely through courses offered in the Evening and Summer Sessions. Part-time students should bear this in mind when choosing a Major or Honours discipline. Provisions for completing senior level requirements should be discussed with the prospective Major/Honours department.

Regulations regarding course load, promotion, examinations, transfer of credit and graduation are to be found in the following pages.

Part-time students should note that the degree must be completed within seven years of the date of promotion to the Course Credit System (which will coincide with the completion of First year requirements). Students who fail to meet this requirement will be required to apply for readmission. (See p.313.) If readmitted they must comply with regulations and requirements in effect at the time of their readmission.

Part-time students wishing to make inquiries regarding their academic program should consult with the Major or Honours department. Students who have not yet declared a Major should contact the Faculty Registrar's Office.

Advice regarding University and Faculty regulations may be obtained from the Faculty Registrar's Office, Room 312 Paterson Hall. Day or evening appointments may be arranged with a counsellor, telephone 231-7407.

Academic Year

Students are strongly advised to familiarize themselves with the important dates of the Carleton Academic Year. The 1977 Summer session dates appear on p. 7; Winter session dates are found on pp. 8-9. Failure to meet deadlines can result in inconvenience and academic and/or financial penalties.

Students taking courses on the University of Ottawa Exchange Agreement or elsewhere by Letter of Permission should note certain important dates in the paragraphs devoted to these procedures. (See below and p. 311.)

Admission Requirements

For detailed treatment of requirements for admission to various programs in the Faculties of Arts and Social Sciences please consult Admission Requirements and Procedures, pp. 25-30.

Readmission

Social Science students returning to studies at Carleton will, in the circumstances detailed below, be required to file a new Application for Admission prior to July 1 for the Fall/Winter session and prior to April 1 for the Summer session. Application forms may be obtained from the Faculty Registrar's Office or from the Office of Admissions (Room 407, Administration Building). Those who must apply for readmission are:

1. students who fail to complete a degree program within seven years of their promotion to the Course Credit System;
2. students who have graduated and who wish to register for a further degree in the Faculty of Arts or the Faculty of Social Sciences;
3. all students who have been absent from Carleton for two consecutive Winter sessions. (Students who have been absent for one Winter session may, at the discretion of the Registrar's Office, be required to reapply for admission. Please consult with a counsellor in the Faculty Registrar's Office);
4. all students who have been admitted to and taken courses at any other post-secondary institution since their last registration at Carleton. (This does not apply to students who do work elsewhere on a Letter of Permission from Carleton, see p. 314.)

Registration

Students in the Faculty of Social Sciences must register between September 6 and 9. In August all students will be issued a permit to register specifying the time and place at which they must begin registration. Students who do not come at the specified time will be required to register late and pay a late registration fee.

Students who were absent the preceding Winter session must advise the Faculty Registrar's Office by August 1 of their intention to return so that a permit may be issued.

Late Registration

It is possible, on payment of a late registration fee (p. 44), to register up to September 30. However, with classes beginning on September 12, students are warned that by registering late they run the risk of finding sections filled and limited enrolment courses closed.

Campus of Registration

Students who have previously been registered as Rideau River campus students and who wish to transfer to St. Patrick's College campus must file a campus transfer with the Faculty Registrar's Office (312 Paterson Hall) no later than August 1 for the transfer to be effective in time for Fall registration and no later than December 1 for it to be effective in the Second term. Similarly a student previously registered through St. Patrick's College must apply through the St. Patrick's Registrar's Office to transfer to the Rideau River campus.

University of Ottawa Exchange Agreement

Undergraduates registered full-time in the Faculty of Social Sciences at Carleton may elect during their Second or higher year to take their fifth credit at the University of Ottawa without payment of additional fees. Students desiring to avail themselves of this opportunity should obtain registration forms from the Faculty Registrar's Office. It is advisable to do this early in September. Approvals must be obtained from several offices at both universities and the last date for Special Student registration at the University of Ottawa is in early September. Exchange privileges are not available to students registered in fewer than four credits at Carleton.

Students who withdraw from an Exchange Agreement course must do so at *both* universities or they will receive a grade of *Abs*, equivalent to a failure.

Grades are transferred to the Carleton transcript for courses taken at the University of Ottawa on the Exchange Agreement.

Change of Course

Students who change courses or sections within a course *must* notify the Faculty Registrar's Office. All requests to make changes must be made by the deadlines listed under "Academic Year" pp. 7-9. Requests made after these deadlines will be granted by the Committee on Admission and Appeals only in the most exceptional circumstances.

Withdrawal

Social Science students who wish to withdraw from courses or from their entire program must notify the Faculty Registrar's Office before the final dates for withdrawal published under "Academic Year" (see pp. 7-9). Students who withdraw officially from courses after these dates will be granted a "withdrawal with academic penalty", (*Abs*) which is equivalent to a failure without supplemental privileges. No student may withdraw from a course after the last day of classes.

Warning:

The onus for notifying the Faculty Registrar's Office of intent to withdraw rests solely with the student. Ceasing to attend lectures or informing the instructor does not constitute an official withdrawal. Courses "dropped" in this way will be assessed a failing grade. No exceptions will be made.

Confirmation of Registration and Biographical Information

In the latter part of the Fall term students will be mailed a "Confirmation of Registration" listing the courses and sections in which they are registered and showing the biographical information which appears in their file. Any errors or changes in this information must be reported to the Faculty Registrar's Office at once. This procedure is essential to ensure the accuracy of the student's transcript.

Change of Degree Program

Social Science students who wish to change degree programs and students who have been required to withdraw from a degree program and who wish to be admitted to another degree program must notify the Faculty Registrar's Office no later than the final dates listed on pp. 8-9.

Although applications for degree transfers to be effective in the Fall term may be submitted as late as September 16, students who wish their transfer to be completed in time for Fall registration must submit this transfer request no later than July 1. Otherwise they may be required to register late and pay a late registration fee.

Student Records

Information recorded at the time of registration is used by the offices which issue grades, transcripts, promotion decisions, etc. Inaccurate or out-of-date information could cause serious inconvenience, such as a delay in receiving awards, results, notification of a need to write a supplemental examination.

Students must report immediately any changes in the following:

1. permanent or home address (final grades and permits to register are sent to this address);
2. local address (all mail will be sent here during the academic session);
3. telephone number for permanent address and for local address;
4. citizenship or immigration status in Canada;
5. name.

Auditing-Courses

Students may, with the instructor's permission, register in courses with the status of auditor (see p. 35 for details.) Auditors will receive no grade and no credit for the course. The deadline for changing the status of a course from credit to audit or from audit to credit will be the final date for registration in the course. Appeals for changes after that date must be addressed to the Committee on Admission and Appeals. They will be granted only in the most unusual circumstances.

No appeal for credit initiated after the last day of classes in the course will be considered.

Academic Information

Credit Value

Courses marked * are half-courses worth one-half (0.5) credit. Unless otherwise indicated, all other courses are worth one full credit (1.0).

Course Load

In the Winter session the normal course load for a full-time student is the equivalent of five full credits. A part-time student will be permitted up to two full credits. Audited courses are included in the credit count.

In the Summer session students may enrol in up to two full credits. Audited courses and courses in which a student has registered for a supplemental examination will be included in the credit count.

Permission to exceed these specified limits to a maximum of six credits in the Winter and three credits in the Summer must be obtained both from the Major or Honours departmental adviser and from the Faculty Registrar's Office. Permission will normally be granted to students who have maintained a C average overall and in their Major and were registered in five credits in the previous session (two credits if the last registration was as a part-time student.) Qualifying University year students will not be permitted to exceed the normal course load specified above.

Standing in Courses

Standing in courses will be shown by alphabetical grades as described on p. 37. Supplemental examinations will be graded by the same scale.

In addition the following symbols will apply in the Faculties of Arts and Social Sciences:

Abs

Absent from formally scheduled final examinations where the necessary term work has been completed. (This grade bears academic penalty in that for purposes of promotion and calculation of certain averages it is interpreted as an FNS grade.)

Def

Final grade deferred for personal or medical reasons with prior approval of the Committee on Admission and Appeals.

IP

Honours thesis or essay is "In Progress". (See p. 317.)

Computation of Averages

The twelve grade point system is set out on p. 37. The grade points, earned in any specific course are determined by multiplying the grade points corresponding to the grade by the credit value of the course. Thus an A+ in a half-credit course will earn the student six grade points, while A+ in a two-credit course would be worth twenty-four grade points.

Grade Point Averages are calculated by dividing the total accumulated grade points by the total credits. Both the credits and the grade points are doubled in the case of double-weighted courses.

Failures are included in the calculation of averages to determine eligibility to enter a Major or Honours program, and to register in more than the normal course load. Failures are not included in the calculation of graduation averages.

Averages for graduation are calculated on the grades earned in the number of courses required by the degree, taking first into consideration the grades earned in the courses of the Major or Honours department. Some departments include all courses in the Major/Honours field; others include only those required by the program. Courses not required for the degree will be designated "Extra to Degree" on the official transcript. For further details please consult a counsellor.

Promotion

Promotion and Probation regulations as detailed below apply to students who registered for the first time in September 1974 or later and who have not subsequently been promoted to the Course Credit system or been readmitted. Students who first registered prior to September 1974 are governed by the regulations set out in the 1973-74 calendar.

Qualifying University Year, First Year, Certificate in Public Service Studies

A full-time student will be required to pass four credits and obtain C- or better in two credits. At the end of First year a student who is promoted will proceed on the Course Credit system.

A part-time student must pass four of the first six credits attempted and obtain C- in two credits.

Course Credit System

Upon successfully meeting promotion requirements at the end of First year the student will proceed on the Course Credit system. Under this system there is no promotion from one year to the next. Credits are accumulated individually according to a pattern approved by the Faculty and the Major or Honours department.

Students must complete their program within seven years from the date of promotion to the Course Credit system.

After promotion to the Course Credit system a student in a three-year degree program may accumulate a maximum of five supplementals, grade-raising examinations, repeated courses, course replacements. A student in an Honours degree program may accumulate only three.

Conditional Pass

Full-time students not on the Course Credit system who pass three credits in the Spring examinations will be considered to have passed their year conditionally. They must pass an additional credit and obtain C- in two credits by the end of the August examination period to be promoted.

A student who has passed conditionally may write supplemental examinations and take replacement courses in not more than a total of two credits in the Summer session.

Failure and Probation

A student who fails to meet the promotion requirements set out above and who is not on the Course Credit system will be deemed to have failed. Credits passed will be retained as credits towards the degree. These credits may not, however, be used to meet subsequent promotion requirements.

A full or part-time student who has failed may continue *in probation*. To clear a probationary status a full-time student must pass four credits and obtain C- or better in two credits in the Spring final examinations. A part-time student must pass four credits of the next five attempted and obtain C- in two of these credits.

Ineligible to Return

A student on probation who fails to meet the terms of probation, thereby failing for a second time, is ineligible for further registration in a degree program in the Faculties of Arts or Social Sciences.

Examinations

University regulations governing examinations are to be found on pages 39-40. Please read this section carefully. In addition, students in the Faculty of Social Sciences are subject to the regulations set out below.

Supplemental Examinations

Students may request permission to write a supplemental examination in a course for which they have received a grade of F. No student will be permitted to write a supplemental in a failed course for which he has received a grade of FNS or Abs.

Deferred Examinations

Students unable to write a final examination because of illness or other circumstances beyond their control, or whose performance on the examination has been impaired by such circumstances may apply within fourteen days to the Committee on Admission and Appeals through the Faculty Registrar for permission to write a deferred examination. For details regarding procedures please consult the section "Special Final Examinations", p. 39.

Deferred examination privileges will not be granted to accommodate students who make travel plans that conflict with the official examination period.

Grade-Raising Examinations

A student may request permission to write an examination in a course already passed. No more than three grade-raising examinations may be written in any degree program (including Qualifying University year). Please refer to "Special Supplemental Examinations", p. 39.

The grade received on this examination will supersede the previous grade whether it is higher or lower. For this reason students are strongly advised to consult with a counsellor.

Supplemental and Grade-Raising Privileges

Regulations which Apply to All Students

1. No student may write more than three grade-raising examinations in the course of degree studies.
2. Honours students may not present more than three credits of the following after promotion to the Course Credit system: supplementals, grade-raising examinations, repetitions, replacements.
3. Pass degree students may not present more than five credits of the following after promotion to the Course Credit system: supplementals, grade-raising examinations, repetitions, replacements.
4. No student may write supplemental and/or grade-raising examinations in more than two credits in any academic year.

Regulations which Apply to Students not on the Course Credit System but Admitted in the Fall of 1974 or Later.

1. Students who fail their year may not write supplementals or grade-raising examinations.

2. Students who pass conditionally in the Spring but fail to meet the terms of promotion by the end of the Summer may not write supplementals or grade-raising examinations unless they are potential Fall graduates.
3. Part-time students who fail more than two credits in a single session may not write supplementals because they have failed and will be on probation.
4. Part-time students may not write supplementals in more than two of their first six credits.

Students not on the Course Credit system who first registered prior to 1974 (Fall) must consult the 1973-74 calendar on the matter of supplemental privileges or consult with the Faculty Registrar's Office.

Residence Requirement

All students will normally be required to complete their final five credits as a full or part-time student at Carleton University. In special circumstances, a student may request permission to take up to two of these final credits elsewhere. Requests should be addressed to the Committee on Admission and Appeals, c/o Faculty Registrar's Office and must be accompanied by the completed application for Transfer of Credit (see below).

Transfer of Credit

Students in good standing in the Faculty of Social Sciences may, with prior permission, take courses at another university and have the credit transferred to their degree program at Carleton. The course must be acceptable to the Carleton department teaching the discipline, the Major/Honours department and the Faculty Registrar.

Grades for courses taken on a Letter of Permission are not normally transferred.

Applications for a Letter of Permission may be obtained from the Faculty Registrar's Office, 312 Paterson Hall. The application form must be returned to that office accompanied by a photocopy of the official description of the course taken from a current calendar and by a copy of the host university's definition of course credit.

Although every effort will be made to see that Letters of Permission are issued in time for registration, it is not possible to guarantee service for requests that are not received, complete with all documentation, before August 1 for Fall registration and before April 1 for Summer registration.

Warning:

Students who take courses without obtaining a Letter of Permission from the Faculty Registrar's Office cannot be guaranteed that credit will be given for the courses. Permission obtained from an instructor or from a department does not obligate the University to accept a credit.

Appeals

The Committee on Admission and Appeals meets from time to time throughout the year to consider appeals from students in Faculty of Social Sciences programs who request special consideration respecting rules and regulations governing their programs and status.

Appeals should be addressed to the Committee on Admission and Appeals, c/o Faculty Registrar, Room 312 Paterson Hall.

Students wishing assistance in preparing their appeal are invited to consult with the Counsellors in the Faculty Registrar's Office.

Qualifying University Year

Students in Qualifying University year must present five credits. This program must include two of items 1, 2 and 3 below. The remaining credits are to be selected from the list of courses on pp. 318-319.

1. English 18.010
2. Mathematics 69.006* and 69.007*
3. a language other than English

Students planning to Major in Biology or Economics or wishing to apply for admission to the Bachelor of Commerce program must take Mathematics 69.006* and 69.007*.

First Year

First year B.A. Students will register in five credits from the list on pp. 318-319. Normally students are advised not to take more than two credits from the same discipline in First year.

Many departments have prerequisite courses which must be taken in First year if a student wishes to continue in a particular subject.

While the University will make every effort to allow students to enrol in a program of their choice, it is recognized that enrolments may have to be limited in certain of the more popular First year subjects.

Courses from other Faculties

Students in Faculty of Social Sciences degree programs may generally select their optional courses from the Faculty of Arts, Faculty of Social Sciences, the Faculty of Science and the Interfaculty courses. Certain professional courses offered by the School of Journalism, the School of Architecture, School of Industrial Design and the Faculty of Engineering are not acceptable for credit.

For further information regarding the acceptability of these courses, students must consult with their Major or Honours department and the Faculty Registrar's Office.

Bachelor of Arts: Major

Note: All B.A. (three year) students on the Rideau River campus must declare a Major, or a Combined Major by Second year.

Major Programs Offered

A History
 Biology (see pp. 254 and 337)
 Classical Civilization (see Classics)
 Economics
 English
 French Studies
 French
 Geography
 German
 Greek (see Classics)
 History
 Italian
 Latin (see Classics)
 Linguistics
 Mathematics (see pp. 278 and 362)
 Mathematical Sciences (see pp. 278 and 362)
 Music
 Philosophy
 Political Science
 Psychology
 Religion
 Russian
 Sociology/Anthropology
 Spanish

Combined Major Programs Offered

A History
 Classical Civilization (see Classics)
 Economics
 English
 French Studies
 French
 Geography
 German
 Greek (see Classics)
 History
 Italian
 Latin (see Classics)
 Linguistics
 Mathematics (see pp. 278 and 362)
 Music
 Philosophy
 Political Science
 Psychology
 Religion
 Russian
 Sociology/Anthropology
 Spanish

Degree Requirements

Candidates will present a total of twenty full credits or equivalent after Junior Matriculation, or fifteen after Senior Matriculation.

Major Requirements

A Major shall consist of between five and seven credits in the Major field. Students electing to take a Combined Major must offer four or five credits in each Major discipline. Exact numbers of credits and lists of required courses are set forth in the departmental entries which follow.

Declaring a Major

Students may apply to declare or to change a Major at any time after having completed the introductory course in the discipline in which they wish to Major. It is strongly recommended that the Major be declared at the beginning of Second year. Applications may be made during the registration process or, during the remainder of the year, through the Faculty Registrar's Office.

Entrance to and Continuation in a Major

To be accepted into a Major students must have at least a C- average in the courses of their Major or Majors. Students whose Major average is less than C- at the end of their Second year may be required to withdraw from the Major field.

Application to Graduate

Students expecting to graduate in the Spring must make application on the appropriate form in the Faculty Registrar's Office by February 1, and those expecting to graduate in the Fall, by September 1.

Graduation Requirements

1. Fifteen credits beyond Qualifying University year.
2. A minimum of eight credits at the 200 level or higher.
3. Requirements of the Major program.
4. A minimum grade of C- in half the courses presented.
5. A minimum average of C- in each Major field.
6. A time lapse after promotion to the Course Credit system of no more than seven years.
7. Not more than five of the following after promotion to the Course Credit system: supplemental examinations, grade-raising examinations, course replacements, course repetitions.

Note: In calculating the average in the Major some departments count all courses taken in the Major field while others count only the courses required. Students who have any questions about the calculation of their graduation average are advised to consult with a counsellor.

Courses taken in Qualifying University year are not included in calculating item 4 above.

Distinction

Graduating students in a three-year program will be designated as graduating "with distinction" if:

1. they have successfully completed the fifteen credits required for the degree without a course failure, supplemental, repetition or replacement; and
2. the ten courses taken beyond the First year requirements were:

(a) approved by the candidates' Department and Faculty and completed while they were registered students of Carleton University;

(b) graded by Carleton either directly or by acceptance and translation of the grade from another academic institution (at least five of these courses must be taken at Carleton University); and

(c) graded under the Carleton University system and the grade point total was at least ninety grade points.

Bachelor of Arts: Honours

Note: These regulations also apply to students in the Bachelor of Commerce program.

Honours Programs Offered

Anthropology
 Art History
 Classical Civilization (see Classics)
 Commerce (see B.Com. p. 320)
 Economics
 English
 French
 Geography
 German
 Greek (see Classics)
 History
 Journalism (see B.J. p. 63)
 Latin (see Classics)
 Linguistics
 Mathematics (see pp. 278 and 362)
 Mathematical Sciences (see pp. 278 and 362)
 Music (see B.Mus. p. 124)
 Philosophy
 Political Science
 Psychology
 Public Administration
 Religion
 Russian
 Sociology
 Soviet and East European Studies
 Spanish

Combined Honours Programs Offered

Anthropology
 Art History
 Classical Civilization (see Classics)
 Economics
 English
 French
 Geography
 German
 Greek (see Classics)
 History
 Italian
 Journalism (see B.J. p. 63)
 Latin (see Classics)
 Law
 Linguistics
 Mathematics (see pp. 278 and 362)
 Music
 Philosophy
 Political Science
 Psychology
 Religion
 Russian
 Sociology
 Soviet and East European Studies
 Spanish

For details of the programs see the departmental entries.

Admission to Honours

New students seeking admission directly to an Honours program should refer to the general admission requirements outlined on pp. 25-30.

In-course students may apply for Honours at any time after having completed the introductory course in the discipline in which they wish to specialize. They are strongly advised to discuss their academic career with the Honours adviser of the Department before making formal application for Honours.

Application for Honours may be made in the course registration or, during the remainder of the year, through the Faculty Registrar's Office. Applications for Honours which involve a change of degree (B.A. to B.Com. for example) must be made on a Degree Transfer form through the Faculty Registrar's Office and are subject to deadlines as set out on p. 311.

For entry into Honours, a student must have a grade point average of 6.0 or better in the Honours subjects and 4.0 or better overall and the recommendation of the Honours Department or Departments.

While the consent of the Department or Departments concerned is necessary for entry to an Honours program, the Department cannot establish a standard of entrance based on a grade point average which is higher than that established by the Faculty as set out in the foregoing paragraphs. Students who consider that they meet the requirements for entry to an Honours program but who have not been accepted by any Department may appeal to the Committee on Admission and Appeals for review of their case. The Committee will report to the Social Sciences Faculty Board on all such appeals. It should be noted, however, that departmental capacities to accept all qualified Honours candidates may be limited by physical resources.

Continuation in Honours

For continuation in an Honours program a student must maintain a grade point average of 6.0 or better in the Honours subject or subjects and 4.0 or better overall.

At the beginning of their last five credits, students in Honours must have a grade of C- or better in at least half of the courses to be credited towards the degree.

Students who fail to maintain Honours standing must withdraw from the Honours program. They may apply for admission to a Major program. Students in this situation are advised to contact a counsellor in the Faculty Registrar's Office.

Degree Requirements

Candidates for a degree with Honours will complete twenty-five full courses or equivalent (twenty-six for Journalism) if admitted from Junior Matriculation, or twenty full courses or equivalent (twenty-one for Journalism) if admitted from Senior Matriculation.

Honours Program Requirements

Please consult the outline of requirements in each departmental entry. Questions about requirements should be addressed to the Honours adviser of the Department concerned.

Application for Graduation

Students expecting to graduate in the Spring must complete an "Application for Graduation" in the Faculty Registrar's Office by February 1, and those expecting to graduate in the Fall, by September 1.

Graduation Requirements

1. Twenty credits beyond Qualifying University year as set out in departmental regulations (twenty-one credits for Journalism).
2. A minimum of eleven credits at the 200 level or higher (thirteen credits for Bachelor of Commerce).
3. Requirements of the Honours program.
4. A minimum of C- in half the courses presented for the degree.

5. A minimum grade point average of 6.0 in each Honours field and 4.0 overall.

6. A time lapse after promotion to the Course Credit system of no more than seven years.

7. Not more than a total of *three* of the following after promotion to the Course Credit system: supplemental examinations, grade-raising examinations, course re-placements, course repetitions.

Note: In calculating the average in the Honours discipline some Departments include all courses in that discipline while others include only the courses required in the program. Students who have any questions about the calculation of their graduation average are advised to consult with a counsellor.

Courses taken in Qualifying University year are not included in graduation requirements except where they include a course required by the program.

Honours Thesis or Research Essay

The Honours thesis or essay must be submitted to the Chairman of the Department or Departments before April 1, or such other date as the Department may specify for Spring graduation. If the thesis or essay has not been completed by this date, it will be recorded as "In Progress".

If the Honours thesis or essay is not submitted to the Department before June 1, and the grade reported to the Dean by July 1, the student may, with the Honours supervisor's consent, re-register for the course in the Summer session and pay the appropriate fee. The completed project must be submitted to the Chairman of the Department by the first day of classes in September, and the final grade must be submitted to the Office of the Dean by October 1 for Fall graduation.

If this requirement has not been met, the student must re-register in September for the course and pay the appropriate fee. The thesis or essay must be submitted by April 1 to the Chairman of the Department. If the completed work is not submitted by this date, a grade of F will be recorded and the student will forfeit his Honours status.

With the recommendation of the Honours supervisor, a student may appeal to the Chairman of the Department to repeat the Honours thesis or essay. If permission is granted, the student will be required to register in the Honours thesis or essay at a full fee.

Students who first registered in the Honours Research essay since September 1974 must complete the project within eighteen months as stated above. Students who first registered in the essay prior to that date are not subject to this limit. They may, however, be subject to readmission regulations. (See p. 310.)

A student may withdraw from the first registration in an Honours thesis or essay without academic penalty or loss of Honours status up until the last date for withdrawal from a full-credit course.

A student who receives a grade of *IP* and subsequently re-registers for an Honours thesis or essay shall be permitted a withdrawal up until the last day for withdrawal, but in so doing forfeits Honours status within the department. To re-enter the Honours program in the following academic session, the student must appeal to the Chairman of the Department. The decision of the department must be conveyed in writing to the Registrar. Students who are permitted re-entry to the Honours program will be required to register in the Honours thesis as though it were a new registration and will therefore be charged a full-credit fee instead of the half-credit re-registration fee.

Where the student has been absent for a year or more and seeks re-entry to the Honours program, a formal application for readmission must be filed.

Classes of Honours Degree

Three classes of Honours are awarded. They are determined by the grade point average as follows:

First Class

9.0–12. in Honours subject and 7.0 or better overall

High Second Class

8.0 or better in Honours subject and 6.0 or better overall

Second Class

6.0 or better in Honours subject and 4.0 or better overall

Departments may recommend the next higher class of Honours degree in the case of a student one of whose averages is in the appropriate higher range and the other within 0.2 grade points of the higher range.

To determine the class of degree for students in Combined Honours programs the average is taken in each of the two subjects, and the simple average of the two is used. If agreeable to both of the Departments concerned, the final average may be computed on the basis of the weighted average of the required number of Honours courses in the two subjects.

Courses Open to Qualifying University Year and First Year Students

The following courses may be taken by Qualifying University year and First year students. Registration will not be permitted in courses which do not appear in this list.

Courses marked * are for students intending to do a Major or Honours program in that discipline. Courses marked ** may be taken only with special departmental approval.

Courses in the Faculty of Social Sciences

Accounting

41.100 An Introduction to Accounting* (open only to students in the Bachelor of Commerce program)

41.101* Principles of Financial Accounting

41.102* Management Accounting

Anthropology

See Sociology/Anthropology

Economics

43.100 Principles of Economics*

43.101 Contemporary Economic Issues

Geography

45.101 The Geographic Web

45.200* Introduction to Cartography**

45.201* Statistical Methods in Geography**

45.202* Air Photo Interpretation**

45.210 Physical Geography**

45.220 Urban and Economic Geography**

45.230 Cultural Geography**

Students are asked to contact the Department of Geography for information regarding the way in which Geography 45.101 can provide Special Departmental Approval for entry into 200-level courses in Geography.

Law

51.100 Introduction to Legal Studies

51.220 Commercial Law I

Political Science

47.100 Introduction to Political Science

First year students may take a 200-level Political Science course concurrently with Political Science 47.100.

Psychology

49.100 Introductory Psychology

Sociology/Anthropology

56.100 Principles of Comparative Social Structures

Courses in the Faculty of Arts

Please refer to p. 60.

Interfaculty

Computing Science

95.101* Introduction to Computers for the Social Sciences

95.102* Introduction to Computing Science

95.104* Introduction to Data Processing

Interdisciplinary

10.100 Humanities: An Examination of Selected Works from Biblical Times to the Present

60.100 Science: Man and His Environment

Courses in the Faculty of Science

Biology

61.100 General Biology

61.101 Introductory General Biology

61.190 Biology and Man

Chemistry

- 6.010 Introductory Chemistry
- 6.100 General Chemistry
- 6.106 General Chemistry (for non-Science students)

Geology

- 6.100 General Geology
- 6.111* 67.112* Geology, Environment and Man I and
- 6.204* Earth, Resources and Society**

Mathematics

- 6.006* Functions and Relations
- 6.007* Introductory Calculus
- 6.102 Calculus*
- 6.106* Pre-calculus Mathematics
- 6.107* Elementary Calculus**
- 6.112 Algebra*
- 6.117* Elementary Algebra*
- 6.127* Topics in Calculus and Algebra*
- 6.131* Excursions into Mathematics I
- 6.132* Excursions into Mathematics II
- 6.141* Gambling I
- 6.142* Gambling II

Physics

- 6.010 Pre-University Physics
- 6.100 Introductory Physics
- 6.105 Introductory Physics (for non-Majors)
- 6.120 Introduction to Astronomy
- 6.190 Astronomy (for non-Science students)
- 6.195 Physics of Music (for non-Science students)

School of Commerce

Officers of the School

Director

J.B. Waugh

Assistant to the Director

(Mrs.) L. Fallis

■ **Accounting**

Co-ordinator

J.B. Waugh

Associate Professors

C.D. Acland

R. Caterina

J.B. Waugh

Lecturers

R. da Costa

P.R. Downing

Sessional Lecturers

G. Dubois

P. Faulkner

R.S. Hart

M. Hill

J.J. Lisowski

J.B. Murray

J.A. Nason

R. Pearmain

J.K. Prokaska

J.J. Rooney

J.H. Smith

R.W. Thiesburger

Special Lecturers

K.W. Brownlee

A.A. Thomas

Instructor

A.H. Cook

■ **Management Studies**

Associate Professors

J.A. Barnhill

A. Blair

W.M. Lawson

Assistant Professors

J.C. Bourgeois

E.J. Gardner

Sessional Lecturers

J. Brothers

H. Gerar

E. Overstreet

T. Rochefort

Special Lecturer

D.A. Thomas

Committee of Management

C.D. Acland

J.A. Barnhill

A. Blair

S. Borins (*Public Administration*)

J.C. Bourgeois

L. Campbell (*Law*)

R. Caterina

R. Collins (*Student Representative*)

P. Downing

E.J. Gardner

R. Hamilton (*Student Representative*)

Linda Holmes (*Student Representative*)

D. Kamra (*Student Representative*)

W.M. Lawson

N.H. Lithwick (*Economics*)

D. Smith (*Economics*)

D.A. Thomas

J.B. Waugh

R.A. Wendt, *Dean, Faculty of Social Sciences*

Bachelor of Commerce with Honours

The Bachelor of Commerce degree is an Honours program and candidates are required to complete a four year course of studies after Senior Matriculation.

The Commerce program is designed to provide a broad foundation in the academic disciplines underlying business and economic affairs. The required courses introduce the student to the relevant academic disciplines and to the functional areas of management. Students, in consultation with the faculty of the School, may structure the balance of their program to build up this foundation in accordance with their personal career objectives and areas of interest. Suggested optional selected areas of interest are listed below. (See *Field of Interest*.)

The program is offered chiefly in the Day division; many course offerings are also available in the Evening division. Each student, however, must spend a minimum of one year as a full-time student in the Day division.

Students who intend to proceed to a professional accounting qualification as a Chartered Accountant (C.A.), Certified General Accountant (C.G.A.), Registered Industrial Accountant (R.I.A.), should consult with one of the Faculty members in Accounting.

Students who may wish to proceed to a Master's Degree in Public Administration at Carleton University are recommended to discuss their optional courses with the Director of the School of Public Administration.

Admission Requirements

First year

1. Completion of Qualifying University year with a grade-point average of 4.0 or better including Mathematics 69.006* and 69.007*; or
2. The Ontario Secondary School Honour Graduation Diploma with a minimum 65% average and including Functions and Calculus.
3. Students who fail to meet the standards required for entry to the Honours program may elect to take their First year in the three year Bachelor of Arts program. This First year program should include Accounting 41.101*, 41.102*, Economics 43.100 or 43.101 and Mathematics 69.107* and 69.127*. Application may then be made for admission to the Second year of the Commerce program. The requirements for Admission to Honours will apply (see page 316).

Note:

Students who are required to register in the pre-calculus course, Mathematics 69.106* (See Placement in First-year Mathematics courses, page 278) will be admitted to the Commerce program, but will not receive credit for Mathematics 69.106* as a degree credit course.

Second and Subsequent Years

Applications for admission to the Second or subsequent years will be assessed on their merits. Minimum transfer requirements are stated on pp. 28-29. Advanced standing for studies taken elsewhere will be granted only for those subjects which are recognized as appropriate for the Commerce program.

Selective Admission

It should be noted that the number of student spaces in the School is limited. Because of this we expect that it may not be possible to grant admission to all applicants who meet the foregoing requirements. Admission will therefore be on a selective basis with preference given to those candidates who show the highest promise of success in the course.

Course Requirements

Candidates for the Bachelor of Commerce degree take a total of 25 courses after Junior Matriculation or 20 after Senior Matriculation. Students with a prior university degree will receive advanced standing where appropriate. Acceptance in the program will be governed by the standards required for entry to the Honours program, however, and a minimum of seven additional courses will be required, following admission to the program, for the Bachelor of Commerce degree.

Academic Standing

Students entering the Second year of the program must have at least two C- grades in the three required First year courses, Economics, Mathematics and Accounting.

Entry to Fourth-year courses offered in Accounting and Management Studies will be governed by academic performance in prerequisite courses. The minimum acceptable grade for entry into such courses is a grade of C- in the designated prerequisites.

The attention of students is drawn to the regulations relating to Honours on p. 316 of the Calendar. In calculating grade-point averages for the class of Honours the average will be taken of all required courses.

Course Load

The normal course load for a full-time undergraduate during the winter session is five full courses. In the Commerce program slightly more than half of these courses are obligatory. Subject to program approval the remaining courses may be selected in the light of individual preference.

Course Selection

Required Courses

Under the Course Credit System there is no promotion from one year to the next. The required course listings for Second year and subsequent years, then, reflect a recommended sequence of courses pattern; individual students may wish to adapt the timing of individual course selection to meet their own particular needs or preferences.

Management and Business Systems

All Commerce students are required to complete one full course in the area of Computers and Business. This requirement may be met as follows:

1. Required: Computing Science 95.101* or 95.104*;
2. A second half course chosen from Management Studies 42.290* or 42.291*, or an acceptable substitute in Computing Science.

The full course requirement should be met as early as possible in the program; in every case the requirement must be satisfied before entering the final year.

First Year

Accounting 41.100

Economics 43.100

Mathematics 69.107*, and 69.117* or 69.127*

Psychology 49.100 or Sociology-Anthropology 56.100

Second Year

Economics 43.200
Economics 43.220
Management Studies 42.208*
Management Studies 42.250*
Management Studies 42.357*

Third Year

Economics 43.210
Management Studies 42.358

Fourth Year

Two approved 400-level courses
Management Studies 42.490*

Suggested Options for Selected Fields of Interest

Accounting and Finance

Accounting 41.200, 41.301*, 41.306*, 41.325*,
41.326*, 41.400, 41.412*.
Law 51.220, 51.320, 51.321, 51.324.
Management Studies 42.291*, 42.391*, 42.406*,
42.410*, 42.411*.

Economics

Economics 43.315 or 43.325, 43.335, 43.360*,
43.361*, 43.380*, 43.420*, 43.421*.
Management Studies 42.404*, 42.405*, 42.406*,
42.407*, 42.410*, 42.411*.
Law 51.322, 51.324.
Political Science 47.300*.
Sociology 53.345*.

Labour and Industrial Relations

Economics 43.335, 43.356*, 43.435, 43.465.
Law 51.441, 51.445*.
Psychology 49.210*, 49.340.
Sociology 53.245, 53.246*, 53.254*, 53.355 or 56.360.

Management and Business Systems

In co-operation with the School, the Computer Science Group, Department of Systems Engineering and Computing Science, offers a selection of courses in the area of business systems. Students with an interest in this area are encouraged to consult with the Computing Science Co-ordinator regarding the selection of appropriate course offerings. Suggested course patterns are listed in Computing Science, pp. 401-409.

Marketing

Psychology 49.210*, 49.212*, 49.260*, 49.262*,
49.268, 49.308, 49.321*.
Sociology 53.210, 53.251*, 53.351*, 53.400, 53.450*.
Computing Science 95.101*, 95.204*, Management
Studies 42.291*.
Journalism 28.201.

Law 51.220, 51.325.
Mathematics 69.350, 69.351.
Economics 43.409, 43.485.

Quantitative Methods

Mathematics 69.107*, 69.117*, 69.207*, 69.217* or
69.102, 69.112, 69.208*; 69.350, 69.381*, (Computing
Science 95.103*).
Management Studies 42.404*, 42.405*, 42.409.
Economics 43.485.
Engineering 94.205*, 94.305*.

Courses Offered

Courses offered by the School of Commerce are listed, under the appropriate headings, in alphabetical order with all courses offered by the Faculty of Social Sciences:

Accounting: see p. 329.

Management Studies: see p. 359.

School of Public Administration

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Officers of the School

Director

G.B. Doern

Supervisor of Graduate Studies

E. Swimmer

Supervisor of Honours Studies

I. MacDonald

Faculty

S. Borins

I. MacDonald

Allan Maslove

Donald Swartz

Eugene Swimmer

R.J. Van Loon

V. Seymour Wilson

Committee of Management

S. Borins (*Public Administration*)

G.B. Doern (*Public Administration*)

D. Elliot (*Law*)

I. Litvak (*Economics*)

A. Maslove (*Public Administration*)

I. MacDonald (*Public Administration*)

A. Steeves (*Sociology-Anthropology*)

D. Swartz (*Public Administration*)

E. Swimmer (*Public Administration*)

R.J. Van Loon (*Public Administration*)

J. Waugh (*Commerce*)

R.A. Wendt (*Dean, Faculty of Social Sciences*)

V. Seymour Wilson (*Public Administration*)

Four Student Representatives (two graduate, two undergraduate)

General Information

The School of Public Administration was established in 1953 through the assistance of a generous grant from the Atkinson Charitable Foundation.

The programs of the School have been developed out of an awareness of the need to provide a general education that will familiarize public servants and students contemplating a career in government service with the main organizational, political, economic and legal elements of the environment of the public service.

The Honours B.A. program is planned on the assumption that the most suitable education for a person desiring to be a capable public administrator is broad and general in base, with specialization at a later stage. While it is designed to be of particular use to students contemplating careers in public employment, it also provides a sound general education for those considering the legal profession or business.

The Certificate program, on the other hand, will be most helpful to those who desire training in fields directly related to Public Administration. This course is designed to encourage public servants without university training to broaden their background. Since they are allowed degree credit for this work, they will also be encouraged, upon its completion, to continue toward a Bachelor of Arts degree.

Public employees not interested in registering for studies leading to a degree, a certificate, or a diploma should note that they may take, as Special students, any of the subjects listed in Public Administration programs for which they have the requisite background. Their attention is directed also to non-credit extension courses related to Public Administration which are offered from time to time by the University. Details may be obtained from the Office of Continuing Education.

As Carleton University is located in the capital city and enjoys close relations with many government agencies, students of Public Administration may profit greatly from the unique advantages thus offered. Such institutions as the Library of Parliament, The National Library, the Public Archives, Statistics Canada, and the specialized libraries of the several government departments, all offer unusual opportunities for study in Ottawa.

Bachelor of Arts with Honours in Public Administration

Qualifying University and First years offered in both Day and Evening divisions, last three years offered in Day division only.

Admission Requirements

Same as for Faculty of Social Sciences (see p. 316). Students not meeting Honours requirements for admission to the First year will be considered for transfer to the Second year after successfully completing the First year in a general Bachelor of Arts program.

Requirements for continuation in Honours are found on p. 316.

Course Requirements

Candidates for the degree of Bachelor of Arts with Honours in Public Administration must satisfy all requirements for the B.A. with Honours.

The School requires Honours students to have a reading knowledge of French. By the beginning of the Fourth year, students shall have completed a First-year French language course, or its equivalent. Any one of French 20.001, 20.011, 20.108 or 20.111 will satisfy the School's French language requirement. Students are, however, strongly encouraged to continue gaining proficiency in the French language by selecting at least one of their options in the French Department.

Candidates must present an Honours Essay (Public Administration 50.498), must achieve a grade of B- or better in this course, and must follow the essay submission and registration requirements as outlined in the University calendar, p. 317.

First Year

Students are free to take any five courses from the list of courses open to First-year students. Students contemplating Honours in Public Administration must take Economics 43.100 or 43.101 and Political Science 47.100.

Second Year

1. *Political Science*
47.200 Canadian Government and Politics
2. *Accounting*
41.100 An Introduction to Accounting, or 41.101* Principles of Financial Accounting and 41.102* Management Accounting
3. *Computing Science*
95.101* Introduction to Computers for the Social Sciences
4. One approved half-course option
5. *Law*
51.205 Introduction to Public Law
6. One of:
Economics
43.220 Statistical Methods in the Social Sciences
Political Science
47.270 Political Enquiry
Sociology-Anthropology
56.200 Research Methods in Anthropology and Sociology

Third Year

1. *Political Science*
47.340 Canadian Public Administration
2. *Economics*
43.201* Introduction to Micro-Economic Theory, and
43.211* Introduction to Macro-Economic Theory and Analysis
3. One full course chosen from:
Law
51.301* Women and the Legal Process
51.324 Tax Law and Policy
51.380 Law of Environmental Quality
51.374 Local Government Law
51.420* International Economic Law I
51.441 Labour Law
51.445* Staff Relations in the Public Service
51.455 Administrative Law I
4. One approved option
5. One approved option

Fourth Year

1. *Political Science*
47.401* Policy Making in Canada, and one of:
47.300* Provincial Government and Politics
47.301* Intergovernmental Relations
47.302* Canadian Municipal Government
47.303* Canadian Urban Politics
47.304* Political Parties and Elections in Canada
47.402* Policy Seminar
47.403* Politics and the Media
47.404* Interest Groups in Canadian Politics
47.406* Legislative Process In Canada
2. One of:
Management Studies
42.358 Organization Theory
Political Science
47.446 Theories of Public Administration
Sociology
53.440* and 53.441* Complex Organizations I and II
3. *Public Administration*
50.498 Honours Essay
4. *Public Administration*
50.400 Honours Public Administration Seminar
5. One approved option

Certificate in Public Services Studies

Offered in both Day and Evening divisions.

This course is designed primarily for public employees who seek special training in public service subjects at the undergraduate level.

Courses taken for the Certificate are normally creditable towards a Bachelor of Arts degree and a transfer student from the Certificate program into such a degree program will be normally required to take at least nine further courses in addition to those required for the Certificate, to be recommended for the degree. At least five of the courses required for a Bachelor of Arts degree must be completed after the awarding of the Certificate.

Full-time candidates for the Certificate are invited to inquire about possible financial aid.

Admission Requirements

Junior Matriculation. The cases of experienced applicants without Junior Matriculation will be considered on their merits and the completion of certain subjects at Carleton may be required before admission. Candidates may be admitted with advanced standing, but must complete at least five courses for the Certificate at Carleton University.

Course Requirements

The following courses are required and the following order is suggested:

1. Political Science 47.100
2. Economics 43.101
3. History 24.230 or Economics 43.325
4. Political Science 47.200
5. Political Science 47.340
6. One other chosen in consultation with the Director according to the needs of the students.

Academic Standing

A candidate for the Certificate must obtain a grade of C or better in at least half of the courses taken at Carleton University for the Certificate.

Courses Offered

Courses offered by the School of Public Administration are listed under "Public Administration" in alphabetical order with all courses offered by the Faculty of Social Sciences. (See p. 383.)

Institute of Soviet and East European Studies

Members of the Institute

Director

Carl H. McMillan

Supervisor of Graduate Studies

To be announced

Supervisor of Honours Studies

George Melnikov

Committee of Management

Michael Oliver (*President of the University*)

James Downey (*Dean, Faculty of Arts*)

R.A. Wendt (*Dean, Faculty of Social Sciences*)

Gilles Paquet (*Dean, Faculty of Graduate Studies and Research*)

Bohdan R. Bociurkiw (*Political Science*)

Denis P. Fitzgerald (*Geography*)

Zbigniew A. Jordan (*Sociology*)

Carl H. McMillan (*Economics*)

George Melnikov (*Russian*)

J. George Neuspiel (*Law*)

John W. Strong (*History*)

Philip E. Uren (*International Affairs*)

Associated Members of the Faculty

Glynn R. Barratt (*Russian*)

J.L. Black (*History*)

Bohdan R. Bociurkiw (*Political Science*)

R. Carter Elwood (*History*)

Denis P. Fitzgerald (*Geography*)

V.I. Grebenshikov (*Russian*)

Zbigniew A. Jordan (*Sociology*)

I.A. Litvak (*Economics*)

Carl H. McMillan (*Economics*)

George Melnikov (*Russian*)

J. George Neuspiel (*Law*)

Teresa Rakowska-Harmstone (*Political Science*)

George Roseme (*Political Science*)

Milada Selucka (*Law*)

Radoslav Selucky (*Political Science*)

Emilie Stichling (*Russian*)

John W. Strong (*History*)

Philip E. Uren (*International Affairs*)

Paul Varnai (*Russian*)

General Information

A committee on Soviet and East European Studies was formed in 1963 to foster interdisciplinary studies, research, conferences and publications in this area. In 1970 it was transformed into an Institute of Soviet and East European Studies. At present faculty members from seven disciplines (Political Science, History, Geography, Economics, Law, Russian and Sociology) are participating in the Institute's work. On the undergraduate level, the Institute offers an interdisciplinary Bachelor of Arts Honours program in Soviet and

East European Studies. Graduates of this program are eligible to apply, under the academic exchange agreement with the University of Leningrad, for nine months of study in the Soviet Union and for nine months of study in Hungary, under the academic exchange agreement with the Institute of Cultural Relations of Budapest, Hungary. The Institute also offers studies leading to a Master of Arts degree in Soviet and East European Studies. This program, the only one of its kind in Canada, stresses interdisciplinary approaches to the study of the U.S.S.R. and Eastern Europe.

The Institute also offers a series of seminars with visiting scholars, sponsors occasional conferences, promotes extension courses in the area, and holds public lectures devoted to the Soviet Union and Eastern Europe. The papers presented have frequently been published under the Institute's auspices. The Institute of Soviet and East European Studies works in close association with the School of International Affairs on problems of East-West relations. Students participating in either the undergraduate or the graduate program have at their disposal not only Carleton's rapidly expanding collection of books, documents, periodicals and micro-materials on the Soviet Union and Eastern Europe, but also the extensive holdings of the National Library and other specialized libraries in Ottawa.

Honours Program

The objective of the Honours program is to equip students with indispensable linguistic tools and to provide, through an interdisciplinary approach, an integrated knowledge of the cultures, historical developments and contemporary social, economic and political problems of the peoples of the area. The program leads to the degree of Bachelor of Arts with Honours in Soviet and East European Studies.

Combined Honours Program

A Combined Honours degree between Soviet and East European Studies and the School of Journalism is offered to interested students.

Course requirements for this degree are planned by the Director of the Institute in consultation with the Director of the School of Journalism, and are designed to accommodate the students' interests and needs.

Combined Honours programs are also possible in conjunction with other disciplines and are governed by the regulations of the departments concerned.

Admission Requirements

Admission to the program must be approved by the Institute of Soviet and East European Studies and by the Faculty of Social Sciences Committee on Honours. Students with at least a 65% average in Senior Matriculation or a C standing in the Carleton Qualifying University year may be enrolled in the program in the First year. With the consent of the Institute, students

may also enter the program in their later years provided they have maintained Honours standing and have completed the program's course requirements to that point.

Course Requirements

Candidates for the degree in Soviet and East European Studies will take twenty courses after Senior Matriculation. All candidates are required to take the equivalent of three full courses in the Russian language in addition to Russian 36.015 or its equivalent. The courses selected will depend on the candidate's language ability and are to be chosen in consultation with the Honours Supervisor.

In the First year, four courses must be chosen from the 100 level or from higher level courses open to First-year students. These courses should be selected as preparation for later study in Soviet and East European area courses offered in the program. The student's First year pattern is selected in consultation with the Honours Supervisor.

In the following years, seven courses (given in no fewer than three different disciplines) are to be selected from the courses offered by participating departments and listed below.

Five additional courses (one of which will be the Honours essay in Soviet and East European Studies) are to be selected in consultation with the Honours Supervisor from the offerings of the Departments of Economics, Geography, History, International Affairs, Law, Political Science, Russian, and Sociology.

Courses Offered by Participating Departments

Russian

- 36.200 Advanced Russian
- 36.201* Advanced Russian Conversation
- 36.203 Russian Grammar
- 36.250 Russian Classics of the Nineteenth Century
- 36.260 Russian Literature in Translation
- 36.300 Russian Style and Composition
- 36.303 Russian Translation
- 36.330 Russian Early Classics
- 36.350 Literature and the Russian Revolution
- 36.360 Studies in Russian Life and Culture
- 36.390 Slavic Language Tutorial
- 36.399 Introduction to Methods of Research
- 36.415 History of the Russian Language
- 36.430 Russian Realism of the Nineteenth Century
- 36.440 Contemporary Russian Drama
- 36.450 Contemporary Russian Literature (After 1935)
- 36.460 Old Russian Literature
- 36.470 Modern Russian Literature
- 36.490* Special Subject
- 36.491 Tutorial

Ukrainian

- 36.116 Introductory Ukrainian
- 36.216 Advanced Ukrainian

German

- 22.380* Special Topic in Twentieth Century German Literature

Geography

- 45.351 Geography of the Northlands
- 45.360* Soviet Union
- 45.361* East Europe
- 45.571* Selected Studies in the Human Geography of Arctic and Subarctic

History

- 24.260 History of Russia and the U.S.S.R.
- 24.360 History of the U.S.S.R.
- 24.361 The Russian Empire
- 24.365 History of Eastern Europe
- 24.460 Selected Problems in Russian History
- 24.461 Selected Problems in Soviet History
- 24.560 Late Imperial and Revolutionary Russia 1855-1921
- 24.588 Historiography (section dealing with Modern Russia)

Economics

- 43.365* The Economics of Planning
- 43.370 The Economics of Socialism
- 43.470 Comparative Economic Systems
- 43.570 Comparative Economic Systems

Law

- 51.322 International Economic Law I
- 51.420* International Economic Law II
- 51.421* International Economic Law III
- 51.463 Public International Law
- 51.488 Socialist Legal Systems

Political Science

- 47.314* Eastern European Politics
- 47.320 Soviet Government and Politics
- 47.330* Politics and Literature
- 47.333 Modern Political Thought and Ideology
- 47.431* Marxist Thought
- 47.432* Contemporary Communist Thought
- 47.461* Soviet Foreign Policy
- 47.462* International Communist Movement
- 47.514* Comparative Communist Politics; Theory and Practice
- 47.515* Comparative Communist Politics; Selected Aspects
- 47.516* Selected Problems in Soviet Politics

International Affairs

- 46.535* Integration in Eastern Europe
- 46.566* Political Economy of East-West Relations

Sociology

- 53.500* Seminar in Sociological Theory: Marx and the Neo-Marxists

Note: Not all of the foregoing courses are offered in any given year and not all combinations of courses are possible.

Honours Essay

A student taking Honours in Soviet and East European Studies must write a major research essay (Soviet Studies 55.498) during his final year. This essay carries the weight of one full course. The subject for research will be selected in consultation with the Institute and a supervisor will be assigned. An oral defense of the essay is required.

Academic Standing

Students must maintain Honours standing as prescribed by the general requirements of the Faculty of Social Sciences.

Graduate Program

The Institute offers an interdisciplinary Master of Arts program in Soviet and East European Studies with the participation of faculty from the Departments of Economics, Geography, History, Law, Political Science, Russian and Sociology, as well as invited specialists from other universities and visiting scholars from the U.S.S.R. and Eastern Europe. It is designed for students wishing to acquire specialized knowledge of the Soviet and East European area, including proficiency in Russian, before proceeding towards a doctoral degree in one of the disciplines represented in the program, either at Carleton or another university. The program is also suitable for students aspiring to a professional, business or government career which requires knowledge of the area. For details, consult the Graduate Studies and Research Calendar.

Courses Offered

Courses offered by the Institute of Soviet and East European Studies are listed under "Soviet and East European Studies" in alphabetical order with all courses offered by the Faculty of Social Sciences. See p. 398.

School of Commerce

For details of programs offered by the School see pp. 320-322.

General Information

Accounting is basically communication—communication of the results of business activity to interested parties such as shareholders, investors, statisticians, governments, and also communication to business management of the information needed to aid in managing the enterprise.

As firms continually become larger and more complex, the need for information on financial position and results of operations becomes greater and at the same time this information becomes more difficult to obtain and interpret.

A knowledge of the means by which the accounting process records and summarizes transactions and attempts to present the results in a meaningful manner is necessary to anyone who uses or relies on financial statements.

Students who, after graduation in Commerce, intend to proceed to professional accounting designations: Chartered Accountant (C.A.), Certified General Accountant (C.G.A.), or Registered Industrial Accountant (R.I.A.), should consult with members of the Department.

Courses Offered

Accounting 41.100

An Introduction to Accounting

A course open only to students registered in the Commerce program, and to declared Major or Honours students in Economics. Accounting method; concepts of income determination and asset valuation; accounting information and managerial decisions.

Day and Evening divisions: Lectures and problems three hours a week.

Accounting 41.101*

Principles of Financial Accounting

Discussion of the concepts of asset valuation and income measurement underlying the preparation and interpretation of financial statements.

Day and Evening divisions, First term: Lectures and problems three hours a week.

Accounting 41.102*

Management Accounting

An introduction to the problems of the use of accounting data for the purposes of planning and control of operations.

Prerequisite: Accounting 41.101*.

Day and Evening divisions, Second term: Lectures and problems three hours a week.

Accounting 41.200

Intermediate Accounting

Further development of problems of revenue recognition and asset valuation.

Prerequisite: Accounting 41.100 or 41.101* and 41.102*.

Day and Evening divisions: Lectures and problems three hours a week.

Accounting 41.301*

Accounting for Business Combinations

Consideration of the accounting problems associated with business combinations. Particular attention will be given to the preparation of consolidated financial statements. Discussion may also extend to financial reporting and diversified companies, reorganizations, etc. Selection of some topics may vary from year to year.

Prerequisite: Accounting 41.200.

Day and Evening divisions, Second term: Lectures and seminars, three hours a week.

Accounting 41.306*

Financial Reporting Problems

Discussion and analysis of selected problems relating to the presentation and interpretation of accounting information on financial position and operating performance. Material for discussion will be drawn from real situations, and from cases. Enrolment in this course may be restricted to thirty students per section.

Prerequisite: Accounting 41.200.

Day and Evening divisions, First term: Lectures three hours a week.

Accounting 41.325*

Cost Accounting

The use of accounting information for purposes of cost control and performance evaluation. Topics will include: analysis and control of elements of cost; design and use of job order, process cost and standard cost systems; analysis of cost variances; variable costing.

Prerequisite: Accounting 41.100 or 41.102*.

Evening division, First term: Lectures three hours a week.

Accounting 41.326*

Management Accounting Systems

Discussion of the role of accounting in the functional areas of forward planning, performance evaluation, and the control of operations. Special attention will be given to the problems of forecasting and long-range planning.

Prerequisite: Accounting 41.325*, or permission of the instructor.

Evening division, Second term: Lectures three hours a week.

Accounting 41.400

Accounting Theory

A study of the evolution of accounting theory and practices, leading to an analysis of current developments and areas of controversy.

Prerequisite: Accounting 41.200 (41.301* and 41.306* are recommended) and permission of the School.

Day division: Lectures and seminars three hours a week.

Accounting 41.412* (41.312*)

Auditing

A course in auditing theory, methodology and application.

Prerequisite: Accounting 41.200 (41.301* and 41.306* are recommended) and permission of the School.

Enrolment may be restricted.

Evening division, Second term: Lectures and seminars three hours a week.

Courses Planned for Summer School and Evening Division

Summer School

The following courses are offered each Summer:

Accounting 41.101*, 41.102*, 41.200.

Evening Division

Core courses in Accounting are available each year in the Evening division. These include Accounting 41.100, 41.101*, 41.102* and 41.200.

Offerings of optional courses are subject to the availability of instructors. Offerings now planned for each of the next five years are: Accounting 41.306*, 41.325*, 41.326*, 41.412*.

General Information

In addition to offering Honours and Major B.Sc. degrees, the Biology Department offers a B.A. Degree with a Major in Biology or a Combined Major in Biology and other disciplines offering Major B.A. degrees. The Major B.A. places less emphasis than the B.Sc. on support from the physical sciences, and allows a student to focus on a particular aspect of Biology in a Three year program. These students register in the Faculty of Social Sciences.

The Combined Major program allows the simultaneous specialization in Biology and one of the humanities or social sciences. Among the latter, combined programs with Economics, Geography, Law, Mathematics, Political Science, Psychology, or Sociology/Anthropology appear to offer particularly appropriate combinations.

Students pursuing these programs must arrange their courses in consultation with the Chairman or Associate Chairman of the Department in one of the patterns outlined below.

Bachelor of Arts Major Program in Biology

Fifteen full-course credits to include:

1. Six Biology courses to include 61.100* or 61.101*, 61.200, 61.215, 61.220*, 61.360, 61.391*;
2. Chemistry 65.100;
3. One additional science course not in Biology;
4. Three courses from one Department and one course from any Department in either the Faculties of Arts or Social Sciences.
5. Three free options, one of which must be at an advanced level.

Bachelor of Arts Combined Major program in Biology

Fifteen full-course credits to include:

1. Five Biology courses: 61.100* or 61.101*, 61.200, 61.215, 61.220*, 61.360, 61.391*;
2. Chemistry 65.100;
3. One additional science course not in Biology;
4. The requirement for a Combined Major in either the Faculty of Arts or Social Sciences.
5. Three or four free options.

* See *Notes on Programs*, p. 256.

For complete information on programs and courses offered by the Department of Biology see pp. 254-260.

Department of Economics

Officers of Instruction

Chairman

N.H. Lithwick

Co-ordinator, St. Patrick's College

R. Neill

Supervisor of Graduate Studies

Soo Bin Park

Supervisor of Honours Studies

G. Rich

Supervisor of Majors Studies

D. Smith

Professors

T.N. Brewis

J.F. Chant

H.E. English

W.I. Gillespie

K.A.J. Hay

N.H. Lithwick

I.A. Litvak

C.J. Maule

G. Paquet

T.K. Rymes

E.G. West

Associate Professors

K. Acheson

M.D. Bordo

R.L. Carson

G.E. Clarke (*St. Patrick's College*)

E.G. Davis

W. Hettich

Kanta Marwah

D. McFetridge

J.C. McManus

C.H. McMillan

R. Neill (*St. Patrick's College*)

Soo Bin Park

G. Rich

A.R.M. Ritter (*Joint appointment: School of International Affairs*)

Assistant Professors

E.U. Choudhri

C.L. Johnson

S. Langdon

A. Maslove

D. Smith

E.G. Wiens

S. Wong

Adjunct Professor

R. Bodkin

Visiting Professors

H. Barkai

K. Borch

P. Langley

P. Luey

A. McHarg

R. Shearer

Departmental Administrator

E. Aldridge

Sessional Lecturers

J. Berg

L. Blain

J. Cheh

G. Clack

K. Clinton

J. Crysdale

J.B. Davis

H. Gerar

L. Good

L. Kenward

H. Kierzkowski

U. Kohli

N. LePan

G. Lerner

J. Mills

C. Parent

T. Schatteles

M. Sheikh

P. Rock

D. Thomas

T. Thomas

H.V. Walker

General Information

An Introduction to Economic Analysis

The Department of Economics offers two courses in Economics at the introductory level in the First year: Economics 43.100 and 43.101. Economics 43.100 provides an introduction to economic analysis for students who expect to be Majors or Honours in Economics or Commerce, and for students who expect to take some concentration in Economics beyond the introductory level. Economics 43.101 will place a slightly greater emphasis on particular policy issues with a somewhat lesser emphasis on theory than Economics 43.100.

Categories of Courses

1. Economics 43.100 or 43.101, to be taken in First year.
2. Required courses in theory and statistics. Economics 43.200, 43.210 and 43.220.
3. Second or Third year courses. Economics 43.201*, 43.211*, 43.250*, and courses numbered Economics 43.300-43.399.

4. Senior options, courses numbered Economics 43.400-43.485, normally taken in Third or Fourth year. (See also Graduate Studies and Research Calendar.)

5. Special Honours courses, numbered Economics 43.486-43.499, for Honours students only.

Major Programs

Students seeking admission to the Major or Honours programs in Economics will normally be expected to have credits in Grade 13 Mathematics or the equivalent. Mathematics 69.107* and 69.127* are requirements in the First year.

Major in Economics

A student will normally be permitted to Major in Economics only if he or she obtained a C- grade in Economics 43.100. A student who has taken Economics 43.101 and obtained a grade of C- or better will be permitted to Major in Economics after the completion of prescribed additional readings in Economics. Students who Major in Economics will take at least six Economics courses: courses in categories 1 and 2, at least one course from category 3, and at least one course from category 4. One of the category 2 courses may be postponed until Third year. The student's program for the Second and Third years must be approved by the Supervisor of Major Studies of the Department.

Combined Majors

A combined Major, including Economics, requires Economics 43.100 or 43.101, 43.200, 43.210, and one 400-level course in Economics and another Economics course chosen in consultation with the Supervisor of Major Studies.

Honours Programs

Honours in Economics

The Honours program may be entered from an Honours First year in the social sciences (see p. 312) or by transfer from the major degree program if University regulations for entry (see p. 316) have been met. The student's program for the Second and subsequent years will be planned in consultation with the Supervisor of Honours Studies of the Department. A minimum of twenty full course credits is required for the degree. University regulations regarding maintenance of Honours standing (see p. 317) apply.

The Honours requirements include Mathematics 69.107* and 69.127* or equivalent, the required courses in categories 1 and 2, one course from category 3, and at least two and a half courses from category 4. In their final year, students will also fulfill two requirements drawn from category 5, qualitatively different from the others: the Honours Seminar in Modern Classics (43.490) and the Comprehensive

Examination (43.499*). An Honours Essay (43.498), in which a grade of at least B- must be attained, may be written to fulfill one and a half credits in category 4. Economics 43.420* and 43.421* are strongly recommended.

Students who choose to do the Honours Essay (43.498) must have a detailed outline of the Essay approved by their adviser and by the Honours Supervisor before the last day for withdrawal from full courses. In the absence of such an approved outline the Department may require the student to withdraw from the Honours Essay.

For purposes of determining an Honours student's standing at graduation, all Economics courses, except Economics 43.100, will be considered. The comprehensive examination will be given the weight of a half course. If a student has taken more than the minimum number of twenty courses, the lowest grades among optional courses taken over the minimum will be disregarded in computing final standing.

Combined Honours

Students may apply for Combined Honours in Economics and another social science discipline. Consideration will also be given to applications for Combined Honours in Economics and other Major fields in the Faculty of Arts.

A student intending to apply for Combined Honours should consult with the Supervisor of Honours Studies.

Students in a Combined Honours program are normally required to take Mathematics 69.107* and 69.127* or equivalent, the required courses in categories 1 and 2, and one and a half courses in category 4. In their final year, students in Combined Honours must also take the Honours Seminar in Modern Classics (43.490) and the Comprehensive Examination in Economics (43.499*). The Honours Essay (43.498), if required, may be written in Economics to fulfill one and a half credits at the 400 level. Economics 43.420* and 43.421* are strongly recommended.

In general, at least six Economics courses beyond the introductory level, at least three of which are at the 400 level, are required to satisfy the Economics requirements for the Combined Honours degree. The minimum of twenty full courses and the procedures for computing final standing described in the preceding section apply to the Combined Honours degree. The Combined Honours programs in two related fields are described in greater detail below.

Combined Honours in Economics and Political Science

Students intending to follow this program should take Mathematics 69.107*, and 69.127* and Economics 43.100 or Political Science 47.100 (or preferably both) in the First year. The choice of courses in subsequent years will be subject to the approval of the two departments. The Honours requirements include at

least an additional six courses in Economics and six courses in Political Science, one of which must be Political Science 47.498 or Economics 43.498 to be taken in the student's final year. These will be arranged so that the student may transfer either to full Honours in Political Science or to full Honours in Economics at the end of the Third year if he then wishes to specialize more intensively. Students must also take the comprehensive examination in Economics and meet the language requirements of the Department of Political Science. Economics 43.420* and 43.421* are strongly recommended.

Combined Honours in Economics and Mathematics

Students intending to take this program will take seven courses in Economics and nine in Mathematics and satisfy the comprehensive examination in Economics. Each year's program should be determined in consultation with the two departments.

The Economics courses taken shall be: Economics 43.100, 43.200, 43.210, one course from category 3, Economics 43.490 (or, with permission of the Honours Supervisor and the instructor, 43.475), 43.499*, and one and a half additional 400-level courses. Economics 43.420* and 43.421* are strongly recommended.

At least seven courses in Mathematics must be taken beyond the First year (if Mathematics 69.102 and 69.112 or their equivalent were taken in the First year), including Mathematics 70.200, 70.210, 70.260, 70.301*, 70.302*, 70.350 and two other courses at the 300 level or above, at least one of which is at the 400 level.

Combined Honours in Economics and Journalism

Students in this program will be required to complete a total of twenty-one courses.

The Economics courses shall be: Mathematics 69.107*, and 69.127*, Economics 43.100, 43.200, 43.210, 43.220, 43.490, 43.499*; an approved course in Economic History and one and a half options in Economics at the 400 level. Economics 43.420* and 43.421* are strongly recommended.

The Journalism courses shall be: A First year language course, Journalism 28.100, 28.101*, 28.200, 28.220, 28.320, 28.321*, 28.351*, 28.421 (or 28.490), 28.498.

The student must pass the comprehensive examination in Economics.

Graduate Program

The Department of Economics offers studies leading to the degree of Master of Arts and to the degree of Doctor of Philosophy. For further details consult the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section p. 213.

Courses Offered

Economics 43.100

Principles of Economics

The course provides a concise and fairly rigorous introduction to the key theoretical concepts of economics. These concepts are developed with a view to being applied to Canadian economic problems such as unemployment and inflation, monopoly control, international trade and foreign ownership, poverty and the distribution of income. The policy implications of these various problems are also discussed.

Day and Evening divisions: Lectures and discussions four hours a week.

Summer 1977, Day division: Lectures and discussions ten hours a week.

Economics 43.101

Contemporary Economic Issues

A discussion of various Canadian economic problems such as unemployment and inflation, monopoly control, international trade and foreign ownership, poverty and the distribution of income. The policy implications of these various problems are also discussed. A number of theoretical concepts are developed as the need arises. Day and Evening divisions: Lectures and discussions four hours a week.

Summer 1977, Evening division: Lectures and discussions six hours a week.

Economics 43.200

Intermediate Micro-Economic Analysis

The modern analysis of production and distribution with special reference to the determination of the conditions which maximize social welfare. The major courses of departure from the social welfare optimum in a full employment economy, with particular attention to imperfections in competition.

Prerequisite: Economics 43.100 or 43.101 (grade of C- or better).

Day and Evening divisions: Lectures three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Economics 43.201*

Introduction to Micro-Economic Theory and Analysis

The main topics in micro-economic theory with illustrations of their applications. Not open to students majoring in Economics or Commerce.

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Day and Evening divisions, First term: Lectures and discussions three hours a week.

Economics 43.210

Aggregate Economic Theory and Policy

An examination of modern macro-economic theory, with special reference to domestic and international monetary theory. A survey of Canadian and international financial institutions and arrangements. A critical examination of macro-economic problems and the policies advocated for their solution.

Prerequisite: Economics 43.100 or 43.101 (grade of C- or better).

Day and Evening divisions: Lectures three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Economics 43.211*

Introduction to Macro-Economic Theory and Analysis

The main topics in macro-economic theory with illustrations of their application. Not open to students majoring in Economics or Commerce.

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Day and Evening divisions, Second term: Lectures and discussions three hours a week.

Economics 43.220

Statistical Methods in the Social Sciences

An introduction to statistical inference.

Prerequisites: Mathematics 69.107* and 69.127* or equivalent and one of Economics 43.100, 43.101 (grades of C- or better), Political Science 47.100 or Sociology 53.100, or permission of the instructor.

Day and Evening divisions: Lectures three hours a week, laboratory two hours a week.

Economics 43.250*

Introduction to Business Finance

A study of business firms' financing and dividend policy decisions, cost of capital and short-term asset management problems. (Also listed as Management Studies 42.250*.)

Prerequisites: Economics 43.100 or 43.101, and Accounting 41.100 or 41.101* and 41.102*.

Day and Evening divisions, First and Second terms: Lectures three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Economics 43.305*

Selected Topics in Economic History

Examination of the economic development of selected economies. The countries to be discussed will be outside Europe and North America, e.g. Argentina, Brazil, Japan, Australia, etc.

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Not offered 1977-78.

Economics 43.310

Economic History of the United States

An examination of the major aspects of the economic history of the U.S.A. from the colonial period to the twentieth century.

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Not offered 1977-78.

Economics 43.315

European Economic History

An examination of the development of economic institutions, especially those aspects of history which may be used to explain the character of the principal economic institutions and practices of the present day. (Also listed as History 24.315.)

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Evening division: Lectures three hours a week.

Economics 43.321*

National Accounting

An introduction to the modern social accounting framework encompassing the national product accounts, the input-output accounts and national transactions accounts, with emphasis on Canadian practice. Attention will be paid to new developments such as national wealth accounts, constant dollar and price accounts, productivity measurement.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.325

The Economic Development of Canada

An examination of the development of the Canadian economy with emphasis on the post-Confederation period. Attention will be focused on the changing patterns of internal and external factor and commodity flows, productivity and technological change. Frequent comparisons with U.S. economic development will be made. (Also listed as History 24.325.)

Prerequisite: One of Economics 43.100, 43.101, History 24.230 or 24.235.

Day and Evening divisions: Lectures three hours a week.

Economics 43.330

Social Economics

An examination of some of the ways in which public authorities attempt to reshape the economic environment towards a greater conformity to social values. The objectives and practice of social security schemes, housing policy, "the war on poverty" etc. will be considered.

Prerequisite: Economics 43.100 or 43.101.

Day division: Lectures two hours a week.

Economics 43.335

Political Economy in the Modern State

An examination of the role of government in the economy with special emphasis on alternate forms of

social co-ordination and the advantages and disadvantages of each form in the Canadian system.
Prerequisite: Economics 43.100 or 43.101.
Evening division: Lectures two hours a week.

Economics 43.340

Problems of Area Development

The problems of depressed areas with particular reference to the Canadian scene. Measures to improve the lot of these areas and the rationale of the underlying public policy.

Prerequisite: Economics 43.100 or 43.101.

Evening division: Lectures and seminars two hours a week.

Economics 43.345

Agricultural Economics

An examination of the agricultural industry in the national economy and in low income societies. The course will emphasize the working out of the basic forces which determine supply-demand for the industry and the functional distribution of income among the factors of production. The place of institutions will be examined and public policy will be critically reviewed.

Prerequisite: Economics 43.100 or 43.101.

Evening division: Lectures and seminars three hours a week.

Economics 43.356*

Introduction to Labour Economics

An introduction to the basic principles of labour economics. Topics covered include: labour markets, the supply of labour, the demand for labour, labour mobility and migration, wage structures, the logic of trade union action, economics of trade unions, the impact of trade unions and selected macro-economic aspects of the labour market.

Prerequisite: Economics 43.100 or 43.101.

Evening division, Second term: Lectures three hours a week.

Economics 43.357*

Introduction to Industrial Relations

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada and Canadian public policy in industrial relations. (Also listed as Management Studies 42.357*.)

Prerequisite: Economics 43.100 or 43.101.

Day and Evening divisions, First term; Evening division, Second term: Lectures three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Economics 43.360*

Topics in International Economics

Prerequisite: Economics 43.100 or 43.101, or permission of the instructor.

Day division, Second term; Evening division, First term: Lectures three hours a week.

Economics 43.361*

Introduction to International Trade

An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development.

Prerequisite: Economics 43.100 or 43.101.

Day division, First term, Evening division, Second term: Lectures three hours a week.

Summer 1977, Evening division, Second term: Lectures five hours a week.

Economics 43.362*

International Monetary Problems

A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.

Prerequisite: Economics 43.100 or 43.101.

Evening division, Second term: Lectures three hours a week.

Economics 43.363*

Introduction to Economic Development

A discussion of the principles of economic development. Application to the problems of the developing countries.

Prerequisite: Economics 43.100 or 43.101.

Day division, First term, Evening division, Second term: Lectures three hours a week.

Summer 1977, Evening division, First term: Lectures five hours a week.

Economics 43.364*

Topics in Area Development

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.365*

The Economics of Planning

This course considers several aspects of the economics of planning.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.370

The Economics of Socialism

This course examines socialism in economic theory and practice with particular reference to Soviet economic development and to Soviet economic planning and management. The Eastern European experience with the Soviet model and the Yugoslav experiments with forms of market socialism will also be considered.

Prerequisite: Economics 43.100 or 43.101.

Evening division: Lectures and discussions three hours a week.

Economics 43.380*

Topics in Canadian Economic Policy

Economic analysis applied to selected policy areas, issues or institutions. One or more of the following

topics may be dealt with: Decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.385*

The Economics of Natural Resources

This course is concerned with the application of economic analysis to questions concerning natural resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources will be discussed.

Prerequisite: Economics 43.100 or 43.101.

Not offered 1977-78.

Economics 43.404*

Operations Research I

Linear programming, networks, and such techniques as PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method). (Also listed as Management Studies 42.404*.)

Prerequisites: Mathematics 69.107*, and 69.117* or 69.127*, (grade of C- or better).

Evening division, First term: Lectures three hours a week.

Economics 43.405*

Operations Research II

Dynamic programming, inventory models, queuing, simulation, non-linear programming. (Also listed as Management Studies 42.405*.)

Prerequisite: Economics 43.404* or equivalent; Economics 43.220, (grade of C- or better).

Day division, Second term: Lectures three hours a week.

Economics 43.406*

Corporate Finance

An examination of some of the major theoretical issues in corporate finance, as well as an examination of certain applied financial management techniques. Topics include: introduction to portfolio theory and the capital asset pricing model, cost of capital, capital structure and dividend policy, capital budgeting under uncertainty, lease financing, mergers and consolidations. (Also listed as Management Studies 42.406*.)

Prerequisites: Economics 43.200 or 43.201*, 43.220, 43.250*, (grade of C- or better).

Day and Evening divisions, First and Second terms: Lectures two hours a week.

Economics 43.409

Statistical Decision Theory

An examination of Bayesian and classical approaches to decision making under uncertainty for individuals and firms. (Also listed as Management Studies 42.409.)

Prerequisites: Economics 43.220 (grade of C- or better).

Not offered 1977-78.

Economics 43.410*

Finance and Capital Markets

The workings and structure of Canada's capital markets with particular reference to differing classes of institutional lenders and borrowers; relationships of non-bank financial intermediaries to the banking system, regulatory agencies and the public, the impact of these institutions on corporate financial and national economic policy, access to foreign capital markets and external financing of Canadian economic development. (Also listed as Management Studies 42.410*.)

Prerequisite: Economics 43.210, or 43.211*, (grade of C- or better).

Evening division, First term, Day division, Second term: Lectures and seminars three hours a week.

Economics 43.411*

Investments

A survey of modern methods of investment analysis with a significant analytical flavour. Topics include: money and capital markets, security valuation, portfolio analysis, and capital market efficiency.

Prerequisite: Economics 43.406*, (may be taken concurrently) (grade of C- or better).

Day division, Second term: Lectures and seminars two hours a week.

Economics 43.415

History of Economic Thought

The crucial achievements in economic theory and doctrine in the nineteenth and twentieth centuries are studied. Special emphasis is given to the inter-relationship between the social environment and economic thought especially to the role of economics in the development of the national state and international institutions.

Prerequisite: One of Economics 43.200, 43.201*, 43.210 or 43.211*, or permission of the instructor.

Day division: Lectures and seminars three hours a week.

Economics 43.420*

Micro-Economic Theory

Theory of individual economic behaviour, theory of exchange and production, general equilibrium, alternative theories of pricing, allocation and distribution. Elementary tools of mathematics will be employed in the exposition of most topics.

Prerequisites: Economics 43.200 and Mathematics 69.107* and 69.127*.

This course is strongly recommended for students in the Honours program in Economics.

Day division, First term: Lectures three hours a week.

Economics 43.421*

Macro-Economic Theory

Theory of market behaviour in open economic systems; Keynesian and Walrasian aggregate economic constructs; theory of government, distribution and economic welfare. Elementary tools of mathematics will be employed in the exposition of most topics.

Prerequisites: Economics 43.210 and Mathematics 69.107* and 69.127*.

This course is strongly recommended for students in the Honours program in Economics.

Day division, Second term: Lectures three hours a week.

Economics 43.425

Advanced Economic History

A discussion of methodology applicable to the analysis of economic history. Intensive examination of selected topics in North American and West European economic history.

Prerequisite: One of Economics 43.305, 43.310, 43.315 or 43.325, or permission of the instructor.

Not offered 1977-78.

Economics 43.430

Industrial Organization and Public Policy

An analysis of the organization of Canadian industry, with reference to associated U.S. industry where necessary. A few representative industries are examined in some detail. Price theory is used to distinguish economic from institutional factors affecting the structure of the economy. Emphasis is laid upon public policies which affect, intentionally or otherwise, the organization and behaviour of industry, e.g., public utility regulation, control of restrictive practices, commercial policy and price supports.

Prerequisite: Economics 43.200 or 43.201*.

Day division: Lectures and seminars three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Economics 43.435

Manpower Economics and Labour Policy

An examination of various theories pertaining to labour and the functioning of labour markets. Discussion of the current body of theory and its historical development. Examination of a number of selected pieces of research material (theoretical and applied) in the general area of manpower economics and labour policy.

Prerequisite: Economics 43.200 or 43.201*.

Evening division: Lectures three hours a week.

Economics 43.440

Public Finance

A discussion of the theory of public finance and an examination of several empirical attempts to quantify the theory. Some topics of current interest concerning the public sector in the Canadian economy are examined in the light of the theory and empirical findings.

Prerequisite: Economics 43.200 or 43.201*.

Day division: Lectures and seminars three hours a week.

Economics 43.445*

Welfare Economics

An examination of contemporary welfare economics and its applications.

Prerequisite: Economics 43.200 or 43.201*.

Evening division, Second term: Lectures two hours a week.

Economics 43.446*

Economic Dynamics: Growth

An introduction to modern theories of the growth of income. The simple "razor's edge" growth theory of Harrod will lead to an examination of the neoclassical growth theorems. Golden Rules of Accumulation; the role of money in growth and the effects on debtor-creditor position of growth in an open economy will be analysed together with policies for growth and growth paradoxes.

Prerequisite: Economics 43.210 or 43.211*.

Not offered 1977-78.

Economics 43.451*

Economic Dynamics: Business Cycles

An analysis of the nature and causes of fluctuations in income, prices and employment. Short-run dynamic models arising from multiplier-accelerator and other economic processes will be examined. Cycle simulation; forecasting, stability conditions; anti-cyclical policy and the problems of maximizing growth without cycles will be discussed.

Prerequisites: One of Economics 43.446*, 43.210 or 43.211* and permission of the instructor.

Evening division, First term: Lectures and seminars two hours a week.

Economics 43.456

Economic Development

An inquiry into some of the economic problems of the developing countries.

Prerequisites: Economics 43.200 or 43.201*, and 43.210 or 43.211*.

Day division: Lectures three hours a week.

Economics 43.460

International Trade

An examination of the theory of international trade and payments and its applications. The current body of theory and its historical development are discussed as are a number of attempts to verify and quantify the theory. A number of present-day problems, policies and institutions are examined in the light of the theory and empirical findings.

Prerequisites: Economics 43.200 or 43.201*, and 43.210 or 43.211*.

Evening division: Lectures three hours a week.

Economics 43.465

Industrial Relations

An examination of various theories concerning industrial relations systems, human resource utilization and organizational maintenance and stress. Application of the core analytical disciplines (political science and economics) to the study of conflict resolution among management, workers and governments in the pluralistic environment of the firm. The operationality and policy significance of a number of royal commission reports

and studies are examined in the light of these various theories of industrial and human relations.

Prerequisites: Economics 43.200 or 43.250*, 43.357*.

Day and Evening divisions: Lectures three hours a week.

Economics 43.466

Monetary Economics

A treatment of contemporary monetary theory emphasizing the theory of the demand and supply for money and the dynamics of monetary disturbances.

Prerequisites: Economics 43.200 or 43.201*, and 43.210 or 43.211*.

Not offered 1977-78.

Economics 43.470

Comparative Economic Systems

A discussion of the structure and functioning of economic systems in theory and practice. Some criteria for evaluating economic performance will be proposed. Contemporary economies such as Yugoslavia, France, Japan, China and the U.S.S.R. will be examined.

Prerequisite: Economics 43.200 or 43.201*.

Day division: Lectures two hours a week.

Economics 43.480

Research Seminar in Urban Economics

An inquiry into the internal dynamics of cities and inter-urban relationships primarily through directed research.

Prerequisites: Economics 43.200 or 43.201*, and 43.220.

Not offered 1977-78.

Economics 43.485

Introduction to Econometrics

Introduction to problems of structural estimation of economic models, single equation estimation and related problems, simultaneous estimation for interdependent systems of linear form, non-linear estimation, Monte Carlo experiments to derive small sample properties of estimators. Some project in structural estimation will be undertaken or assigned.

Prerequisites: Economics 43.200 or 43.201*, 43.220, and Mathematics 69.107* and 69.127* or equivalents.

Day division: Lectures two hours a week, laboratory one hour a week.

Economics 43.490

Honours Seminar in Modern Classics

Students will be expected to read a group of original works in economics selected by faculty member(s) in charge of the seminar. They will meet regularly to discuss these readings, to answer questions orally and

to write examinations and/or papers assigned on the topics considered. Open to Fourth year Honours students with permission of the Supervisor of Honours Studies.

Day and Evening divisions: Seminar two hours a week.

Economics 43.492

Tutorial in Economics

An additional tutorial in Economics may be taken subsequent to or concurrently with Economics 43.490.

Prerequisite: Permission of the Supervisor of Honours Studies.

Day division.

Economics 43.498

Honours Essay

A student taking Honours in Economics may write an Honours essay during his final year. This essay will count for one and a half course credits. Students will work under an individual faculty adviser.

Prerequisite: Permission of the Supervisor of Honours Studies.

Economics 43.499*

Comprehensive Examination

Prerequisite: Permission of the Supervisor of Honours Studies.

First and Second terms.

Courses Offered at St. Patrick's College

Economics

43.100 Principles of Economics

43.101 Contemporary Economic Issues

43.200 Intermediate Micro-Economic Theory

43.210 Aggregate Economic Theory and Policy

43.220 Statistical Methods in the Social Sciences

43.236 Development of the Welfare State

43.325 Canadian Economic History

43.330 Social Economics

43.343 Special Studies in Canadian Economics

43.344* History of Canadian Economic Thought

43.360* International Economics

Courses Planned for Summer School and Evening Division, 1977-81

The Department offers the following courses each Summer: Economics 43.100, 43.101, 43.200, 43.210, 43.361*.

Each year, availability of instructors permitting, we plan to offer *at least* one more half course at the 300 level and a course at the 400 level.

For Summer 1977, we plan to add Economics 43.344*, 43.357*, 43.363*, and 43.430.

The Department offers the following Evening courses each year: Economics 43.100, 43.101, 43.200, 43.201*, 43.210, 43.211*, 43.220, 43.250*, 43.325, 43.340, 43.345, 43.357*, 43.360*, 43.361*, 43.406*, 43.410*, plus a choice of optional courses that will vary from year to year.

For 1977-78, the Evening options include: Economics 43.236, 43.315, 43.362*, 43.363*, 43.404*, 43.435, 43.445*, 43.451*, 43.460, 43.465.

Officers of Instruction

Chairman

T.P. Wilkinson

Supervisor of Graduate Studies

J.P. Johnson, Jr.

Supervisor of Honours and Majors Studies (B.A.)

J.E. Tunbridge

Supervisor of Honours Studies (B.Sc.)

P.J. Williams

Supervisor of Special and Part-time Students

D.M. Anderson

Professors

D.P. Fitzgerald

J.P. Johnson, Jr.

G.C. Merrill

D.M. Ray

D.R.F. Taylor (*Joint appointment, Geography and International Affairs*)

P.E. Uren

P.J. Williams

Associate Professors

D.M. Anderson

J. Clarke

D.B. Knight

J.K. Torrance

A.I. Wallace

T.P. Wilkinson

Assistant Professors

D. Bennett

J.E. Tunbridge

M.W. Smith

Instructor

M.F. Fox

Map Librarian

B.E. Farrell

Instrumentation and Research Laboratories

A. Pendlington

L. Boyle

Programmer/Analyst

S. Richer

Sessional Lecturers

S. Merkley

S. Raby

A.D. Stanley

G.D. Taylor

G.C. Topp

General Information

Both Majors and Honours programs in Geography offer the student considerable freedom to take a broad spectrum of courses, or to pursue a particular interest through courses in Geography and in related disciplines. Students are encouraged to include in their First and Second years, Geography 45.101 and a selection of geography courses at the 200 level that will provide a broad base for future course selection and for future careers. In the Third and Fourth years, through selection of courses in Geography and related disciplines, it is possible to concentrate in one of several current areas of emphasis in Geography.

Areas of emphasis are currently: Urban Studies; Regional, Resource and Economic Development (with particular reference to Canada, areas within the Third World, communist blocs and northern lands); Cultural and Historical Geography; and Physical Geography. An outline of programs for these interests, based on courses, both in Geography and in other disciplines, is available from the Department, but individual programs must be planned and approved in consultation with a departmental adviser.

Students should note that higher level courses in Geography frequently require prerequisites which should be considered in planning a program. Students wishing to take a particular course for which they do not have the full prerequisite should obtain the written permission of the instructor. The first digit of the course number corresponds to the year in which the Department normally expects the student to take the course.

Detailed course descriptions and guidelines to various programs of courses within Geography are available from the Department of Geography.

Some courses now listed as Day division may be offered in the Evening in 1977-78. Students should enquire at the Geography Department regarding course times.

Under University regulations a student may, with departmental permission, take the equivalent of one course credit per winter session at the University of Ottawa without additional fee. Geography courses taken in the Department of Geography at the University of Ottawa are acceptable for credit towards a Carleton program.

Courses in Geography at Carleton are summarized in the chart (next page). Not all courses at the 300 and 400 levels are offered each year; please refer to section *Courses Offered*.

UNDERGRADUATE COURSES IN GEOGRAPHY

Half Courses

[illegible]

Major Programs

Major in Geography

This program is offered for the student who wishes a liberal arts education with emphasis in Geography. Guidance on patterns of courses for particular interests is available from the Department.

Students admitted to a single Major in Geography are required to complete the equivalent of at least six full courses in Geography beyond Geography 45.101, and must include Geography 45.299*. A program of Geography courses should include:

1. Geography 45.101;
2. the equivalent of at least three full courses at the 200 level;
3. the equivalent of at least three full courses at the 300 level.

Combined Majors

Students admitted to a Combined Major in Geography and another department are required to complete the equivalent of at least four full courses in Geography beyond Geography 45.101. A program of Geography courses should include:

1. Geography 45.101;
2. the equivalent of at least two full courses at the 200 level;
3. the equivalent of at least two full courses at the 300 level.

Honours Programs

The Honours program in Geography is offered for the student who wishes to prepare for teaching, graduate study or other specialization in the field of Geography. Information on recommended patterns of courses related to various interests is available from the Department. There is substantial freedom in the program for the student to take courses of special interest in the University, as well as courses in Geography and related disciplines.

Students reading for an Honours degree must satisfy the general University regulations for Honours (p. 316).

B.A. with Honours in Geography

Students admitted to the Honours Geography program are required to complete the equivalent of twenty full courses beyond Senior Matriculation or Qualifying University year in Arts or Social Sciences. At least the equivalent of ten full courses must be in Geography beyond Geography 45.101, and must include Geography 45.299* and 45.497 or 45.498. A program of Geography courses should include:

1. Geography 45.101;
2. the equivalent of at least three full courses at the 200 level;
3. the equivalent of at least three full courses at the 300 level;
4. the equivalent of at least three full courses at the 400 level. Note that Geography 45.498 carries the credit equivalent of two full courses, and Geography 45.497 the credit equivalent of one full course.

Students wishing to take the Type A Specialist Certificate at an Ontario College of Education are advised to consult the Supervisor of Honours Studies as early as possible in order that an appropriate program can be arranged.

Combined Honours

Students taking Combined Honours in Geography and another subject are required to complete the equivalent of at least six full courses in Geography beyond Geography 45.101. Geography 45.299* and an Honours Research Essay in one of the Combined Honours departments or the Honours Comprehensive Examination (45.497) in Geography must be included. A program of Geography courses should include:

1. Geography 45.101;
2. the equivalent of at least two full courses at the 200 level;
3. the equivalent of at least two full courses at the 300 level;
4. the equivalent of at least two full courses at the 400 level. Note that Geography 45.498 carries the credit equivalent of two full courses, and 45.497 the credit equivalent of one full course.

Fourth-year Honours students may take Geography courses listed in the Graduate Studies and Research Calendar only with permission of the Supervisor of Graduate Studies.

B.Sc. with Honours in Geography

The Bachelor of Science Honours program in Physical Geography is designed to give the student an understanding of the earth's surface as man's physical environment. The student will specialize in the study of properties and processes of the earth's surface materials and atmosphere and the interactions between these.

The program consists of twenty courses beyond Senior Matriculation or Qualifying University year Science, selected in a pattern approved by the Supervisor of Honours Studies in the Geography Department, and consistent with the following requirements:

1. The First year of the program will be consistent with Science Faculty requirements for First year Science.
2. The program will contain eight full courses in Geography at or beyond the 200 level, including the

Honours Research Project 45.496, which should be taken in the final year.

3. Seven full courses to be taken must be selected from the list below and should include Geography 45.210, 45.299*, 45.308, 45.312 and 45.345. In special cases students may take an appropriate graduate course in their final year, with permission of the Supervisor of Graduate Studies.

Geography

- 45.200* Introduction to Cartography
- 45.201* Statistical Methods in Geography
- 45.202* Air Photo Interpretation
- 45.210 Physical Geography
- 45.299* Introduction to Field Techniques
- 45.303* Quantitative Geography
- 45.308 Geography of Soils
- 45.312 Geomorphology
- 45.325 Cartography
- 45.345 Climatology
- 45.402* Problems in Physical Geography
- 45.410* Advanced Field Geography
- 45.411* Quaternary Geography
- 45.412* Terrain Analysis
- 45.413* Hydroclimatology
- 45.414* Micrometeorology
- 45.415* Slope Development: Forms, Processes and Stability
- 45.416* Engineering Geomorphology
- 45.417* Glacial Geomorphology
- 45.418* Selected Topics in Physical Geography
- 45.424* Soil Mechanics

Physics 75.100 or 75.105 (required course in the Second year of the program if not taken in First year)

Mathematics 69.257* or 69.258*

Geology 67.233* and 67.281*

4. The remaining seven courses must include:

- (a) Two approved courses in Science, not in Geography, beyond the 100 level;
- (b) Two approved courses in Science, Computing Science or Engineering;
- (c) Two Arts or Social Science electives, one of which must be an approved course, not in Geography;
- (d) One free elective.

A recommended program is:

First Year

Mathematics 69.107* and 69.117*

Chemistry 65.100

Geology 67.100

One of: Geography 45.210, Biology 61.100 or Physics 75.100 or 75.105

Arts or Social Science elective (may not be Geography 45.101 if 45.210 is selected)

Second Year

Geography 45.200*, 45.202*, 45.299*

Geography 45.210 or 45.308 or 45.345

Mathematics 69.257*

Science elective or Physics 75.100 or 75.105 (required course in Second year if not taken in First year)

Arts or Social Science elective

Third Year

Geography 45.312

Geography 45.308 or 45.345

One 400-level Geography

One Science continuation course

Arts or Social Science elective

Fourth Year

Three 400-level Geography courses (including 45.496)

One Science continuation course

Free option

Note:

A Human Geography course is recommended as one of the Arts or Social Science electives.

Graduate Program

The Department of Geography offers studies leading to the degree of Master of Arts. For further details consult the Graduate Studies and Research Calendar.

Courses Offered

Geography 45.101

The Geographic Web

An introductory course concerned with the structure of two major systems: the ecological system that links man and his environments, and the spatial system that links one region or place to another. Concepts and methods useful in geography are introduced through an integrated view of current concerns with the environment and ecology, and with regional contrasts and imbalances in human welfare. Four topic areas are introduced: I. practical work in geography; II. the physical environment; III. population, resources and space; IV. cultural, urban and political systems. The course will be presented in a regulated, self-instructional mode. All students must register in a lecture and a laboratory section for administration of, and feedback on, self-instructional materials. Students are asked to contact the Department of Geography for information on the way in which this course provides Special Departmental Approval for First year students for entry into 200-level courses in Geography.

Day and Evening divisions: Lectures two hours a week, laboratory two hours a week.

M.F. Fox (Co-ordinator), J.E. Tunbridge, T.P. Wilkinson

Geography 45.200*
Introduction to Cartography
 Introduction to cartography and the collection of geographic data.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Day division, First term: Lectures two hours a week, laboratory two hours a week.
Farrell

Geography 45.201*
Statistical Methods in Geography
 Introduction to statistical analysis as applied to geography.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Evening division, Second term: Lectures two hours a week, laboratory three hours a week.
F. Fox

Geography 45.202*
Air Photo Interpretation
 An introduction to photogrammetry and interpretation of aerial photographs.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Day division, Second term: Lectures two hours a week, laboratory two hours a week.
F. Fox

Geography 45.210
Physical Geography and Environmental Management
 The course first develops an understanding of the physical environment and how physical systems function. It then examines the importance of the natural environment to man, his impact upon it and the need for environmental management.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Day division: Lectures two hours a week, laboratory three hours a week. Laboratory sections will relate to prerequisites.
P. Johnson, Jr., M.W. Smith, J.K. Torrance, T.P. Wilkinson

Geography 45.220
Urban and Economic Geography
 Geographical analysis of socio-economic phenomena, including manufacturing industry, agriculture, cities and their functions and transportation systems. Emphasis on analytical concepts and their application to policy-making.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Day division: Lectures and discussion three hours a week.
Wallace

Geography 45.230
Cultural Geography
 Examination of distributions, in time and space, of cultures and elements of cultures, and the ways in which human groups, by their ideas and behaviour, affect the evolution of humanized landscapes. The linkages between culture and habitat are stressed.
 Prerequisite: Geography 45.101 or Second year standing in the University. (See p. 313.)
 Day and Evening divisions: Lectures and discussion three hours a week.
D.B. Knight, G.C. Merrill

Geography 45.299*
Introduction to Field Techniques
 An intensive week-long field camp (following Fall registration) and meetings through the First term. Geographical techniques of observation, data gathering, measurement and analysis will be explored in group work and individual projects. Cost of room and board relating to the field camp are borne by the student. Required for Geography Majors, Honours and Combined Honours students.
 Prerequisites: Second- or Third-year standing in any Majors of Honours Geography program.
 Day division, First term: One week field camp and one hour lecture/laboratory per week.
M.F. Fox (co-ordinator) and members of the department

Geography 45.303*
Quantitative Geography
 Multiple-regression and factor analytic techniques as applied to problems of classification, regionalization, explanation and hypothesis testing in geographical research. Various taxonomic algorithms are examined and an introduction to geographical models is provided.
 Prerequisites: Geography 45.201* and enrolment in a Geography degree program or permission of the instructor.
 Day division, Second term: Lectures three hours a week.

Geography 45.305
Geography of Canada
 Analysis of factors related to patterns of organization and change in the Canadian landscape. Focus on major problems of Canadian geography and the Canadian environment.
 Prerequisite: Third year standing or permission of the instructor.
 Evening division: Lectures three hours a week.

Geography 45.308
Geography of Soils
 The chemical and physical properties of soils; soil types and their distribution.
 Prerequisite: Geography 45.210 or permission of the instructor.
 Day division: Lectures two hours a week, laboratory three hours a week.
J.K. Torrance

Geography 45.312

Geomorphology

Geomorphic processes and related landforms with emphasis on glacial and fluvial activity. Field and laboratory methods used in analysis of landforms and geomorphic processes.

Prerequisites: Geography 45.201* and 45.210 or permission of the instructor.

Not offered 1977-78.

Geography 45.320

Urban Geography

Theoretical survey of urban systems: relations between cities (economic base, central place theory, etc.); internal structure, emphasizing form, social-demographic and especially functional characteristics. Regional variation in urban patterns concluding with topics of special contemporary or future importance.

Prerequisites: Geography 45.220 or permission of the instructor.

Day division: Lectures and discussion three hours a week.

J.E. Tunbridge

Geography 45.325

Cartography

The history and development of map making. The compilation, production and uses of the modern topographic map. Special purpose maps and their use, construction and development including computer mapping.

Prerequisites: Geography 45.101 and 45.200* or permission of the instructor.

Evening division: Lectures two hours a week, laboratory three hours a week.

Geography 45.330

Developing Nations of Inter-Tropical Africa

Geographical aspects of the problems and potential of the developing nations of inter-tropical Africa. The interaction of men and environment will be examined as well as the historical developments which have led to some of the present day situations. (Also listed as Anthropology 54.330.)

Prerequisite: Third year standing or permission of the instructor.

Not offered 1977-78.

Geography 45.331*

Cultural Geography of the Caribbean

Caribbean lands and societies are examined from the viewpoint of cultural geography, with an emphasis upon the culture history that has produced the pluralistic societies that characterize the modern Caribbean.

Prerequisite: Geography 45.230 or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

G.C. Merrill

Geography 45.332*

Cultural Geography of the South West Pacific

Cultural and racial complexities and diverse patterns of population distribution and man/land relationships to be examined from the viewpoint of cultural geography and related to problems of development in Australia, New Zealand and the islands of the South West Pacific.

Prerequisite: Geography 45.230 or permission of the instructor.

Not offered 1977-78.

Geography 45.333*

Land Use, Regional Development and Planning in Canada

Introduction to land resource planning in Canada, with the chief emphasis on Ontario. The forces affecting land use in Canada, evolution of the conservation movement, the watershed authority, the roles of government in local, regional and national planning, and relationships between conservation, regional development and land resource planning. Selected Ontario and federal legislation is examined.

Prerequisite: Third year standing or permission of the instructor.

Day division, First term: Lectures two hours a week, on hour discussion group.

D.M. Anderson and visitors

Geography 45.334*

Renewable Resource Planning in a Local Area

A planning-oriented examination of a local river basin aimed at developing a coordinated plan for renewable resource management, utilizing existing local, regional and watershed legislation in Ontario. Students work in project teams, under supervision, to develop a practical plan for land use, water resource management, urban development, recreational space and environment preservation.

Prerequisites: Geography 45.101 and 45.333* or permission of the instructor.

Day division, Second term: Lectures, discussion and project work three hours a week.

S. Merkley

Geography 45.335

Historical Geography of Canada

An introduction to the methodology of historic geography and to the historical geography of Canada.

Prerequisite: Geography 45.230 or History 24.230 or permission of the instructor. A course in statistics recommended.

Not offered 1977-78.

Geography 45.336*

Man/Land Relationships in Prehistory

An examination of the development of the symbiotic relationship between man and the land: livelihood, settlement types and patterns, the origins and dispersals of domesticated plants and animals, cultural evolution in prehistory.

Prerequisite: Geography 45.230 or permission of the instructor.
Not offered 1977-78.

Geography 45.340

Advanced Economic Geography

Aspects of the quantitative analysis of problems in economic geography including industrial location, regional structure, and the evolution of spatial patterns of socio-economic phenomena.

Prerequisites: Geography 45.220 or permission of the instructor.

Day division: Lectures and discussion three hours a week.

A.I. Wallace

Geography 45.345

Climatology

Meteorology and climatology: an examination and explanation of atmospheric properties and behaviour, physical processes within the atmosphere, and weather patterns. The global energy balance of the earth-atmosphere system and its importance in determining global climate. Considerations of climatic change; computer simulation.

Prerequisites: Geography 45.210 or permission of the instructor.

Day division: Lectures two hours a week, laboratory two hours a week.

M.W. Smith

Geography 45.350

Western Europe

The physical and cultural regions of Europe will be examined. Emphasis will be placed on the influence of the varying physical and cultural resources on the evolving patterns of European organization and relationships with particular stress on Western Europe.

Prerequisites: Third-year standing or permission of the instructor.

Evening division: Lectures three hours a week.

Geography 45.351

Geography of the Northlands

An analysis of the physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing especially on Canada and the Soviet Union.

Prerequisite: Third year standing or permission of the instructor.

Not offered 1977-78.

Geography 45.360*

Soviet Union

An examination of the problems of the Soviet Union emphasizing locational factors, man/land relationships and areal differentiation.

Prerequisites: Third-year standing or permission of the instructor.

Evening division, First term: Lectures three hours a week.

Geography 45.361*

East Europe

An examination of the problems of Eastern Europe emphasizing locational factors, man/land relationships and areal differentiations.

Prerequisites: Third-year standing or permission of the instructor.

Evening division, Second term: Lectures three hours a week.

Geography 45.370*

Population Geography

Studies of the distributional aspects of population attributes. The areal patterns of population characteristics and their spatial variations associated with differences in the nature of places are examined. Migratory movements are considered within the framework of spatial models of interactions between locations.

Prerequisite: Geography 45.230 or permission of the instructor.

Not offered 1977-78.

Geography 45.374

Local Government law

Offered as Law 51.374.

Geography 45.380*

Developing Nations of Asia

An analysis of the physical and human resources of selected regions. Special emphasis will be placed on rural development.

Prerequisite: Third year standing or permission of the instructor.

Not offered 1977-78.

Geography 45.381*

Developing Nations of Asia: Selected Problems

An analysis of selected problems associated with under-development, particularly those relating to population and agriculture.

Prerequisite: Geography 45.380* or permission of the instructor.

Not offered 1977-78.

Geography 45.395*

Selected World Regional Problems

Geographical analysis of topical problem areas in the world community.

Not offered 1977-78.

Geography 45.401*

Problems in Human Geography

A course designed to permit a student to pursue his interests in a selected field of human geography. The student prepares papers for discussion with his tutor.

Prerequisites: Final year Honours standing and permission of the Supervisor of Honours Studies.

Day division, First or Second term: Hours arranged.

Geography 45.402*

Problems in Physical Geography

A course designed to permit a student to pursue his interests in a selected field of physical geography. The student prepares papers as the basis for discussion with his tutor.

Prerequisites: Final year Honours standing and permission of the Supervisor of Honours Studies.

Day division, First or Second term: Hours arranged.

Geography 45.410*

Advanced Field Geography

The principles and techniques of analysis, mapping and recording data in the field. Further information may be obtained from the Department.

Not offered 1977-78.

Geography 45.411*

Quaternary Geography

Changes in the physical environment of the Earth during and subsequent to the last ice age. (Also listed as Geology 67.415*.)

Prerequisites: Geography 45.308 and 45.345, or permission of the instructor.

Day division, First term: Lecture/seminar three hours a week.

J.P. Johnson, Jr.

Geography 45.412*

Terrain Analysis

Statistical techniques of morphometric and spatial analysis; applications in geomorphology and geography.

Prerequisites: Geography 45.201*, or a course in statistical methods and permission of the instructor.

Not offered 1977-78.

Geography 45.413*

Hydroclimatology

Spatial problems of measurement and analysis in the hydrologic cycle.

Prerequisite: Geography 45.345, or permission of the instructor.

Not offered 1977-78.

Geography 45.414*

Microclimatology

Prerequisite: Geography 45.345, or permission of the instructor.

Not offered 1977-78.

Geography 45.415*

Slope Development: Forms, Processes and Stability

The various forms of sloping ground, their origin and present behaviour; in relation to environment and materials. Landslides, mudflows, creep, soil erosion; criteria for relative stability.

Prerequisite: Geography 45.308 or permission of the instructor.

Day division, First term: Classes meet four and one-half hours a week; lectures approximately three hours, balance laboratory and field studies.

P.J. Williams

Geography 45.416*

Engineering Geomorphology

Types of terrain and their significance for resource development and engineering works. Ground surface features and naturally occurring processes will be examined with emphasis on those relevant to highway, pipeline and other construction. (Also listed as Geology 67.418*.)

Prerequisite: Geography 45.210 or permission of the instructor.

Day division, Second term: Lectures three hours a week.

G.C. Topp, J.K. Torrance, P.J. Williams

Geography 45.417*

Glacial Geomorphology

Analysis and significance of glacial landforms and environments.

Prerequisites: Geography 45.312 or permission of the instructor.

Not offered 1977-78.

Geography 45.418*

Selected Topics in Physical Geography

A course focusing on selected topics in Physical Geography. Topics for 1977-78: periglacial phenomena, the effects of freezing and thawing on soils, and related issues.

Prerequisites: Fourth year standing and permission of the instructor.

Day division, Second term: Lectures/laboratory three hours a week.

P.J. Williams

Geography 45.421*

Selected Themes in Urban Geography

A seminar developed on selected themes, introduced in Geography 45.320, for example, perception and consumer behaviour in shopping, planning concepts and development; application in the specific context of Ottawa.

Prerequisites: Geography 45.320 and permission of the instructor.

Evening division, First term: Seminar three hours a week.

J.E. Tunbridge

Geography 45.422*

Urban Social Geography

The spatial aspects of social structure and processes in urban areas are examined in several cultural contexts concepts of social space, segregation, symbolism and sentiment are examined within an ecological framework. Data collecting and techniques are emphasized. Comparative factorial ecology is the central theme.

Prerequisites: Geography 45.320 and 45.303* or permission of the instructor.

Not offered 1977-78.

Geography 45.424*

Soil Mechanics

Offered as Engineering 82.424*.

Geography 45.431*

Advanced Cultural Geography

Cross-cultural thematic examination of territorial organization, territoriality, and landscape impact of authority and ideology. Regional foci will be principally Canada and Africa.

Prerequisite: Geography 45.230, or permission of the instructor.

Day division, Second term: Seminar three hours a week.

B. Knight

Geography 45.433*

Urban Planning

Offered as Engineering 82.333*.

Geography 45.434*

Transportation

Offered as Engineering 82.434*.

Geography 45.435

Historical Geography

The relation of geography and history, the use of primary documents, model building and statistical methods in historical geography. The main focus will be North America.

Prerequisites: Geography 45.335 or permission of the instructor.

Not offered 1977-78.

Geography 45.440

Political Geography

This course examines the geographic structure of the nation state, including capitals and "core areas", boundaries and frontiers, and global patterns of political activity.

Prerequisite: Permission of the instructor.

Evening division: Lecture/seminar three hours a week.
Raby

Geography 45.442*

Transportation Geography

Geographical appraisal of transportation networks in relation to their physical and economic environment. Traffic flows as the dual of spatial distributions of human activity. The economics of transport as they relate to global development and the location of industry. Problems of urban transport. (Also listed as Engineering 82.435*.)

Prerequisites: Geography 45.201*, 45.220 and 45.340 or permission of the instructor.

Evening division, Second term: Lectures and seminars three hours a week.

Geography 45.443*

Issues in Applied Economic Geography

Problem-oriented course in the field of economic geography. Topics will be drawn from a variety of areas of concern, such as agriculture, resource development, manufacturing and trade.

Prerequisites: Geography 45.220 and 45.340 or permission of the instructor.

Not offered 1977-78.

Geography 45.445*

Land Resource Use

This course will examine, from both theoretical and empirical approaches, the nature and problems of man's use of land resources. The emphasis will be on non-urban land use in the Western world context. The impact of the urbanization process on land use patterns and conflicts will be explored.

Prerequisites: Geography 45.333* and 45.334* and Fourth year Honours standing or permission of the instructor.

Day division, Second term: Lectures/seminars three hours a week.

D.M. Anderson

Geography 45.490

Development of Geographic Thought and Methodology

The development of ideas and methods in geography. An examination and discussion of original works. Recommended for Honours students.

Prerequisite: Fourth year standing or permission of the instructor.

Not offered 1977-78.

Geography 45.496

Honours Research Project

Candidates for B.Sc. with Honours in Geography will undertake a research project based on a laboratory or field problem. The project will be supervised by a member of the Department and a written report must be submitted. The candidate may be examined orally on the report.

Prerequisites: Fourth year standing in the Geography B.Sc. Honours program.

Day division: Hours arranged.

Supervisor of B.Sc. Honours Studies (co-ordinator) and members of the Department

Geography 45.497

Honours Comprehensive Examination

Required in Fourth year for Honours in Geography if Geography 45.498 (Honours Research Essay) is not written (or for Combined Honours if an Honours essay is not written in either of the 'Combined' departments). The Honours Comprehensive Examination will consist of two parts: Part 1 concerned with general and philosophical questions related to geography and two 'minor' interest areas; and, Part 2 concerned with a single selected 'special' interest area. 'Interest Areas' will be selected from: Physical Geography; Urban-Economic Geography; Rural-Resource; and Cultural-Historical Geography. The examination will be held twice annually towards the middle of First and Second terms. Details and preparatory reading lists can be obtained from the Supervisor of Honours Studies.

Prerequisite: Fourth year Honours standing and permission of the Supervisor of Honours Studies.

Supervisor of Honours Studies (co-ordinator) and members of the Department

Geography 45.498

Honours Research Essay

A student in the final year of Honours in Geography (or Combined Honours) may write an Honours essay. The essay will count the equivalent of two full course credits. Students will work under an individual faculty adviser. Entry into Geography 45.498 is by permission of a faculty adviser and the Supervisor of Honours Studies.

For permission to be granted a detailed essay research proposal must be approved by the last day of late registration, otherwise the student must enrol in Geography 45.497 (Honours Comprehensive Examination) to meet the requirements for the Honours degree.

Intending graduate students are recommended to select Geography 45.498 (Honours Research Essay.)

Prerequisite: Fourth year Honours standing and permission of the Supervisor of Honours Studies.

Day division: Hours to be arranged with faculty adviser.

Supervisor of Honours Studies (co-ordinator) and members of the Department

Courses Planned for Summer School and Evening Division, 1977-81

Summer 1977

45.201*, 45.305, 45.332*, 45.342*, 45.345, 45.360*.

Summer 1978

Two courses from 100 and 200 levels; two 300-level courses.

Summer 1979

Two 300-level courses; one 400-level course.

Summer 1980

Two courses from 100 and 200 levels; two 300-level courses.

Summer 1981

Two 300-level courses; one 400-level course.

Evening Division 1977-78

45.101, 45.201*, 45.230, 45.305, 45.325, 45.350, 45.360*, 45.361*, 45.421*, 45.440, 45.442*.

Evening division 1978-79 through 1980-81

45.101; two Second year courses; three Third year courses; two Fourth year courses.

Courses will be offered in a sequence in Fall-Winter Evening and Summer Evening divisions such that part-time students can complete an Honours B.A. in Geography. It will, however, not be possible to complete a degree in Geography through Summer School alone. Summer School students may find it helpful to consult the University of Ottawa's Summer School Calendar.

Officers of Instruction

- Chairman**
K.G. McShane
- Supervisor of Honours**
D. Fraser
- Supervisor of Majors**
R.D. Abbott
- Professors**
R.D. Abbott
P.J. Fitzgerald
- Associate Professors**
D. Fraser
George Neuspiel
- Assistant Professors**
J. Barnes
L.L. Campbell
J. Davidson
W.W. Elliott
A. MacKenzie
K.G. McShane
N. Sargent
J. Wayand
- Instructor**
J. Selucka
- Adjunct Professors**
J. Pharand
J. Wershof
- Professional Lecturers**
J.-J. Binks-Rice
D. Cameron
Y. Delage
L. Doering
J. Eddy
J. Elton
D. Finn
C. Johnston
A. Johnston
P. Kelly
S. MacLellan
J. McLean
J. Morrow
J. Murray
A. Newman
Polowin
Robichon

General Information

Courses in this Department are intended to promote an awareness of the place of rules respecting human conduct in the political, social and economic environment. Their purpose is *not* to qualify anyone to practise law or to give counsel in legal matters. Many Law courses were originally established to meet the need of students in other programs for a knowledge of the legal aspects of their own disciplines. It is a continuing desire of the Department that students bring to bear on legal problems the insights of other disciplines and it is the Department's hope that students will in turn benefit from a knowledge of the techniques of legal analysis and of the legal principles relating to their own disciplines.

Students intending to proceed to a law school should note that at present no credit is given towards a law degree for Law courses taken at Carleton. However, prospective law students may find Carleton Law courses valuable introductions to professional studies. Members of the Department are available to advise prospective law students as to their choice of law school and the selection of courses at this University.

Combined Major Program

Students may undertake the study of Law within the Faculties of Arts or Social Sciences in a Combined Major program in conjunction with another discipline.

The Combined Major program is governed by the following regulations:

1. All Combined Major programs must be approved by the Department after consultation with the Supervisor of Majors or some other member of the Department specifically designated for that purpose.
2. Combined Major students will complete at least five, but not more than seven full courses or their equivalent in Law according to the following prescribed pattern:
 - (a) Law 51.100, or the combination of 51.101* with 51.102*; and
 - (b) Law 51.200; and
 - (c) one Law course at the 300 level or higher; and
 - (d) at least two further Law courses or their equivalent, but not including Law 51.201.
3. Students whose other discipline in a Combined Major program is not in the Faculty of Social Sciences must take at least one introductory or survey course in a social science as may be approved by the Department from time to time.
4. Students seeking to enter or remain in the Combined Major program must have obtained a grade of C- or better in Law 51.100, or its prescribed equivalents.

5. Students in the Combined Major program must satisfy the general University regulations governing B.A. Major programs.

6. All transitional arrangements governing entry into a Combined Major program and published in previous issues of the calendar are revoked.

Note: The attention of Combined Major students is drawn to the requirement that any change in their program must be expressly approved by the departmental Supervisor of Majors and that this approval must not be presumed. Failure to heed the departmental Supervisor's advice may result in the student's ineligibility for certain advanced and graduate courses and programs.

Combined Honours Program

Students may undertake the study of Law within the Faculties of Arts or Social Sciences in a Combined Honours program in conjunction with another discipline.

The Combined Honours program is governed by the following regulations:

1. All Combined Honours programs must be approved by the Department after consultation with the Supervisor of Honours or some other member of the Department specifically designated for that purpose.

2. Combined Honours students must complete a minimum of twenty-five courses from Junior Matriculation or a minimum of twenty courses from Senior Matriculation.

3. Combined Honours students will complete at least six but not more than nine full courses, or their equivalent, in Law, according to the following prescribed pattern:

- (a) Law 51.100, or the combination of 51.101* with 51.102*; and
- (b) Law 51.200; and
- (c) at least one Law course at the 300 level or higher; and
- (d) at least one other Law course at the 400 level; and
- (e) an Honours essay in Law (51.498), or a designated equivalent, or an Honours essay in the other combined discipline. (When the Honours essay is in the other discipline, students may be required to take Law 51.490, Directed Studies in Law.); and
- (f) At least one other Law course which may not include Law 51.201.

4. Students whose other discipline in a Combined Honours program is not in the Faculty of Social Sciences must take at least one introductory or survey course in a social science as may be approved by the Department from time to time.

5. Students seeking to enter or remain in the Combined Honours program must have obtained a grade of C- or better in Law 51.100, or its prescribed equivalents.

6. Students in a Combined Honours program must have obtained a grade of B- or better in their Honours Essay in Law (51.498), or in the designated equivalent. Similarly a grade of B- or better is required in Directed Studies in Law 51.490, whenever this course is offered in substitution of the Honours Essay in Law, in accordance with the provisions of regulations 3(e) above.

7. Students in a Combined Honours Program must satisfy the general University Regulations for B.A. Honours programs.

Note: The attention of Combined Honours students is drawn to the requirement that any change in their program must be expressly approved by the departmental Supervisor of Honours and that this approval must not be presumed. Failure to heed the departmental Supervisor's advice may result in the student's ineligibility for certain advanced and graduate courses and programs.

Prerequisites

The attention of students is drawn to the fact that many law courses have designated prerequisites. In some instances "permission of the Department" is an alternative to the specified prerequisite. It must not be presumed that such permission will be granted automatically; and, it may be granted subject to certain conditions, including the fulfillment of preliminary reading requirements or the submission of some written work.

Some Possible Law Course Sequences in Various Areas of Interest

Theory of Law: 51.100, 51.200, 51.201, 51.210, 51.310, 51.353.

Comparative Law: 51.100, 51.201, 51.322, 51.386*, 51.387*, 51.463, 51.488, 51.567*.

Law and the Economy: 51.100, 51.220, 51.320, 51.321, 51.322, 51.323, 51.324, 51.325, 51.420*, 51.421*, 51.441.

Law and Government: 51.100, 51.205, 51.351*, 51.352*, 51.353, 51.354*, 51.374, 51.380, 51.441, 51.445*, 51.450, 51.455, 51.463, 51.555.

Law and Society: 51.100, 51.200, 51.201, 51.234, 51.284, 51.301*, 51.325, 51.333, 51.348*, 51.353, 51.354*, 51.355*.

The foregoing suggestions are not intended to limit students in their selection of courses in accordance with individual wishes. Students planning to take either combined Honours or Majors in Law should carefully read the relevant Department, Faculty, and University regulations, and should not select any courses other than Law 51.100 and 51.200 without consulting the Department's adviser for Honours or Majors.

Courses Offered

Law 51.100

Introduction to Legal Studies

An historical introduction to the study of law and to the legal system; the background to the British and Canadian constitutions, general concepts of constitutional and administrative law; the development of public and private law from the Anglo-Saxon period to the present; the legal institutions of Canada and the place of law and of the courts in the community; legal interpretation and the use of legal precedents.

Day and Evening divisions: Lectures three hours a week, group workshops one hour a week.

R.L. Doering, K.G. McShane

Note: Law 51.100, and the combination of Law 51.101* with 51.102* are completely identical in content and only one of them may be taken for credit.

Law 51.101*

Historical Introduction to Legal Studies

An historical introduction to the study of law and to the legal system; the background of the British and Canadian constitutions, general concepts of constitutional and administrative law. Development of public and private law from the Anglo-Saxon period to the present; the rule of law.

Offered Spring term (January Admissions Program 1978) and Summer session 1977. Lectures and group workshops, four hours a week.

Note: Law 51.100, and the combination of Law 51.101* with 51.102* are completely identical in content and only one of them may be taken for credit.

Law 51.102*

Introduction to the Canadian Legal System

The Canadian legal system with emphasis on the organization and jurisdiction of the courts. A study of the doctrine of precedent with case studies drawn from law of torts. Legal interpretation of statutes. Canadian criminal process and civil procedures. Public law and problem of subordinate legislation. The place of law and of the courts in the community.

Prerequisite: Law 51.101*.

Day division, Second term: Lectures three hours a week, group workshops one hour a week.

Summer 1977, Evening division: Lectures and group workshops four hours a week.

Note: Law 51.100, and the combination of Law 51.101* with 51.102* are completely identical in content and only one of them may be taken for credit.

Law 51.200

The Legal Process

A methodological study of the legal process in general, with particular reference to its operation in the Canadian legal system; the nature of legal rules, principles, standards and concepts; the advantages and disadvantages

of the legal process in comparison with other processes for the solution of conflicts. This course is designed for students who intend to select Law as one of the Combined Major or Honours subjects.

Prerequisite: Law 51.100, or permission of the Department.

Day and Evening divisions: Lectures and discussions three hours a week.

J. Barnes, P.J. Fitzgerald, D. Fraser

Note: Only one of Law 51.200 or 51.201 may be taken for credit.

Law 51.201

The Elements of Law

A topical survey of the Canadian legal system including its concepts, institutions, processes and functions. As this course is particularly designed for teachers of law in high schools, the methodological problems will be emphasized. This course is designed for those *not* intending to proceed to a Combined Major or Honours degree in Law.

Note: Law 51.201 may not be taken for credit towards a Combined Major or Honours degree in Law.

Prerequisite: Permission of the Department.

Not offered 1977-78.

Law 51.205

Introduction to Public Law

A basic study, with special reference to Canadian institutions, of the law governing the relationships between the state and the individual, and the workings of the different organs of the state. Constitutions, the role of the judiciary in constitution-making, division of legislative powers. Introduction to the principles of administrative law. Legislation for protection of general and minority rights. Role of courts and related institutions in selected public law fields.

Prerequisite: An introductory course in Political Science or Law 51.100 (or its equivalents), or permission of the Department.

Day and Evening divisions: Lectures and discussions three hours a week.

D. Elliott, G. Robichon

Law 51.210

Theory of Law and Politics

A study of various theories and institutions concerning the interrelated fields of law and politics. Several large topics will be studied in the light of treatment by prominent thinkers of western civilization. Topics such as the following will be covered: justice, natural law, state absolutism and positive law, anthropological and historical theories of law and society, civil obedience and the right to revolt. Law 51.210 may be accepted as a Political Science credit with approval of that Department. See related courses, Political Science p. 371.

Prerequisite: An introductory course in either Law or Political Science, or permission of the instructor.

Day or Evening division: Lectures and discussions three hours a week.

D. Wayand

Law 51.220

Commercial Law I

An examination of the principles of contract including formation, enforceability, capacity, privity, discharge and remedies for breach; the formation of the contract of sale, the duties and remedies of both parties under the Ontario Sale of Goods Act; the application of the Personal Property Security Act; special contracts including those of tenancy and bailment; proposals for reforms.

Day and Evening divisions: Lectures and group workshops three hours a week.

N. Sargent

Law 51.234

Law and Antisocial Behaviour

Canadian criminal process; the nature and purpose of criminal law; the criminal act as distinguished from civil wrong; the origin and development of contemporary principles and procedures, the various categories of criminal conduct. The role of enforcement agencies and of the courts in the administration of criminal law. Methods of criminal correction. Introduction to the study of the relationship between criminal activity and deviant behaviour.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, or permission of the Department.

Day and Evening divisions: Lectures and discussions three hours a week.

T. Elton

Law 51.284

Law of the Family

Law and the family as a unit; engagement, marriage and dissolution of marriage; rights and duties of spouses and parents. The law and the child; care, custody, access, guardianship, adoption, illegitimacy. The role of courts and of social welfare agencies.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

M.-J. Binks-Rice, R. Morrow

Law 51.301*

Women and the Legal Process

This course examines the manner in which the legal process has affected the status of women. Areas of concentration within the Canadian context will include the criminal law, citizenship and immigration, education, employment, and welfare and social services.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, or permission of the Department.

Evening division, Second term: Lectures and discussions three hours a week.

J. Barnes

Law 51.310

Jurisprudence and Legal Theory

Theories of the nature and the philosophical basis of law. Classical theories; natural law; the development of positivism; utilitarianism; the analytical theory and the pure theory of law; the historical and the sociological schools of jurisprudence, modern legal realism. Law and ethics, law and morality. (Also listed as Philosophy 32.350.)

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, 51.210, or permission of the Department.

Day division: Lectures and discussions three hours a week.

P.J. Fitzgerald

Law 51.320

Commercial Law II

This course deals with the principles of agency, the contract of employment, and the law of landlord and tenant. These areas are examined with particular emphasis on the rights and duties of parties to the relationship, and the rights of persons dealing with the parties and the termination of the relationship. Both commercial and residential tenancies are examined in the law of landlord and tenant.

Prerequisite: Law 51.220 or permission of the Department.

Day division: Lectures and discussions three hours a week.

R.L. Campbell

Law 51.321

Company Law

The law relating to corporations and partnerships in Canada; the historical development of the corporate device; rights and duties of officers, directors and shareholders of the corporation; legal aspects of corporate finance; comparative aspects of corporation law in the United Kingdom, the United States and Europe.

Prerequisite: Law 51.220, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

R.L. Campbell

Law 51.322

International Economic Law I

A general introduction to the legal aspects of foreign trade transactions. Standardized export and import trade terms. Forms, incidents and documentation of various types of foreign trade contracts. Conflict avoidance, arbitration and litigation arising from international transactions. Governmental regulation of foreign trade. Legal aspects of the international transfer of investments and technology. Conventions and institu-

tions of international economic cooperation (e.g. GATT, ICC, IMF, etc.).

Prerequisite: Law 51.220 or permission of the Department.

Day division: Lectures and discussions three hours a week.

Law 51.323

The Legal Nature of Property

The nature and history, creation and termination of interests in different types of property, with particular reference to the law of real property. Topics will include the different types of ownership, creation and effect of third-party rights in land, disposition of property on death, conveyancing and restrictions over the use of land.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, or permission of the Department.

Day or Evening division: Lectures and discussions three hours a week.

N. Sargent

Law 51.324

Tax Law and Policy

An introduction to federal income taxation, both personal and corporate, and a review of the Canadian tax system generally with some reference to the development, implementation and enforcement of tax policy.

Prerequisite: One of Law 51.200, 51.201, 51.205, 51.220, 51.320, an introductory course in Economics, or permission of the Department.

Day and Evening divisions: Lectures and discussions three hours a week.

P.J. Davidson

Law 51.325

Consumer Law

The need for consumer protection in the provision of both goods and services; the traditional legal protections afforded by statute and common law; the legislative response to consumer pressures for greater control of manufacturing, wholesaling, retailing and the provision of services; further projected reforms in Canada and overseas; price maintenance and monopoly power.

Prerequisite: Law 51.220, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

T.D. Finn, R.L. MacLellan

Law 51.333

Torts

The protection of personal interests in physical and proprietary security from interference. The manner in which the legislatures and the courts develop and broaden the law to meet the needs of a changing society. Compensation and loss distribution. The principal matters studied are: intentional torts, negligence, strict liability, and nuisance.

Prerequisite: Law 51.100 (or its equivalents), 51.200, or permission of the Department.

Day division: Lectures and discussions three hours a week.

D. Wayand

Law 51.348*

Legal Aspects of Sport

The course deals with the problems of the legal regulation of sporting activities in Canada, including the constitutional power to regulate sport, criminal and civil liability for injuries sustained in the course of sport, school sports, legal problems connected with clubs, professional sports and leagues with particular reference to players' contracts, league decisions, disciplinary proceedings and commercial problems relating to sport.

Prerequisite: Law 51.100 (or its equivalents), 51.220, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

J. Barnes

Law 51.351*

Communications Law I

This course is concerned with restrictions of freedom of expression in Canada. Specific topics for examination will include: freedom of speech and press; privileged statements; pretrial publicity; copyright; sedition; libel and slander; defamation; contempt of court; obscenity; censorship. (Also listed as Journalism 28.351*.)

Prerequisite: Permission of the Department.

Day division, First term: Lectures and discussions three hours a week.

Law 51.352*

Communications Law II

The law as it affects the Canadian broadcasting and communications industry. The primary focus of the course will be on the operations of the Canadian Radio-Television and Telecommunications Commission. Specific topics for examination may include: administrative formulation on policy; multiple, monopoly and foreign ownership; control of program content (violence, obscenity, 'good taste', food and drug commercials, liquor advertising, indirect censorship); controlling program quality; the provision of a right of access to the media; cablevision licensing and control; alternative sanctions. (Also listed as Journalism 28.352*.)

Prerequisite: Permission of the Department.

Evening division, Second term: Lectures and discussions three hours a week.

C.C. Johnston

Law 51.353

Civil Liberties and Human Rights

This course examines legal conflicts which raise issues affecting basic freedoms of individuals or groups in Canadian society. The recurrent theme is the appropriate balance to strike between the rights of the individual and the rights of that collectivity of individuals

called society. Specific topics to be examined include: the concept of liberty; law and conscience; civil disobedience; crimes without victims; civil liberties and constitutional guarantees; the Canadian Bill of Rights; racial discrimination and human rights legislation; hate literature and its control; legal problems of minority groups; poverty and law.

Prerequisite: One of Law 51.200 or 51.205, or permission of the Department.

Day and Evening divisions: Seminars three hours a week.

Law 51.354*

Law and Native Peoples of Canada

A study of the legal situation of native peoples in Canada. Topics will include the constitutional framework of the law, Indian status, aboriginal rights, the treaty system, the relations between special native rights and the principle of equality before the law, hunting rights, government policy and the reserve system. Comparative references to native policy in other countries will also be considered.

Prerequisite: One of Law 51.205, 51.353, or permission of the Department.

Day division, First term: Lectures and discussions three hours a week.

E. W. Elliott

51.355*

Law Reform and the Protection of Life

A study of relations among law, medicine and ethics in the area of protection of life. Topics considered will include: the lack of articulation in Canadian law of values concerning life, legal/ethical implications of definitions of death, "right to die" legislation, right to life and the unborn, human experimentation, and behaviour modification.

Prerequisite: Law 51.100 or permission of the Department.

Evening division, First term: Seminars three hours a week.

E. Keyserlingk

Law 51.374

Local Government Law

The legal framework of local and regional governments; the distribution of functions between levels of local government and problems of the relationship between local government bodies and provincial and federal authorities; planning law and land use, regionalism and local government reform. (Also listed as Geography 45.374.)

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

J.D. Cameron, E.A. Johnston

Law 51.380

Law of Environmental Quality

The legal process relating to resource conservation and to the control and abatement of pollution in water, air and land. The common law and statutory remedies through private actions in the ordinary courts; the role of public authorities through coercive techniques such as criminal sanctions, licensing of resource use, licensing of pollution, and direct remedial actions; non-coercive techniques such as subsidies, tax incentives, public works, research and persuasion; land-use control techniques in protecting environmental quality; constitutional division of legislative competence concerning these matters; administrative problems of achieving interjurisdictional cooperation in activities by public authorities.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, or permission of the Department.

Evening division: Lectures and discussions three hours a week.

R.D. Abbott

Law 51.386* (51.486*)

The Civilist Tradition

A comparative study of selected topics of several major European legal systems which are based on Roman Law. The development of Roman Law up to and including Justinian's *corpus juris civilis*. The reception of Roman Law by various European continental legal systems. Comparative analysis of selected articles of the French, Austrian and German codes.

Prerequisite: One of Law 51.100, 51.200, 51.201, 51.205, 51.210, or permission of the Department.

Day or Evening division, First term: Lectures and discussions three hours a week.

D. Wayand

Law 51.387* (51.487*)

Quebec Civil Law

A comparative examination of the legal system of Quebec. The weight and importance of the various sources of law in Quebec and how the law is made. Study of the Quebec Civil Code and of the force of the Code provisions. Division of the Code and influence of Roman Law. Techniques of interpretation of the Code. Detailed study of selected Articles of the Code. Interpretation and application of the Code in Federal Appeal Courts.

Prerequisite: 51.386*, or permission of the Department. Not offered 1977-78.

Law 51.420*

International Economic Law II

A study of the laws governing trade relations with selected global and/or regional economic organizations.

Prerequisite: Law 51.322 or permission of the Department.

Not offered 1977-78.

Law 51.421*

International Economic Law III

An advanced study of the detailed rules governing economic relations with selected global and/or regional economic organizations.

Prerequisites: One of Law 51.322, 51.420* or permission of the Department.

Not offered 1977-78.

Law 51.441

Labour Law

A study of the ordering role of law in industrial relations processes. The study considers the effect of law on the relationship among employer, employer association, employee, union, and the public. The main process considered is collective bargaining, and sub-processes studied are the recognition of the bargaining agent, bargaining for the collective agreement, and administration of the agreement. The principal ordering role of law that will be considered is its attempt to resolve industrial conflict, which includes formalisation of disputes in adversary modes, as well as methods of resolution. The ordering role is studied in its social as well as its legal context, by the use of non-decisional materials as well as cases.

Prerequisite: Law 51.100 (or its equivalents) or permission of the Department.

Evening division: Seminars three hours a week.

D. Fraser, S. Murray

Law 51.445*

Labour Relations in the Public Service

A study of the collective bargaining process in the public sector with particular emphasis on the Federal, Ontario and Quebec Public Services. The problems of adapting accepted collective bargaining procedures and techniques to the public service environment; the right to strike in the public service and essential industries; grievance procedures; the general problem of labour-management relationships in the public sector and the consequences thereof for efficiency and loyalty.

Prerequisite: An introductory course in Law, or a Political Science course in Canadian government, or Law 51.441 or permission of the Department.

Evening division, Second term: Seminars three hours a week.

P.Y. Delage, H. Newman

Law 51.450

Canadian Constitutional Law

A detailed study of the basic principles of the Canadian Constitution. Sovereignty, the Rule of Law, the nature and limits of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian Constitution. An investigation of contemporary legal problems of federalism.

(Note: Students primarily interested in the political aspects of the Government of Canada may wish to register in Political Science 47.400.)

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.201, 51.205, or a Political Science course in

Canadian government, or permission of the Department.

Day or Evening division: Lectures and discussions three hours a week.

J.G. Neuspiel

Law 51.455

Administrative Law I

Implementing public policy. Basic legal problems faced by public authorities in implementing legislated policy. Topics include articulation of policy in statutory form, choice of forum for decision-making and interpretation, discretionary justice, judicial and non-judicial controls, and related questions.

Prerequisite: Law 51.200 or 51.205, or permission of the Department.

Day or Evening division: Lectures and discussions three hours a week.

D.W. Elliott

Law 51.463

Public International Law

An examination of the role of law in contemporary international relations. Nature, history and sources of international law. International personality of states; the status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.205, or permission of the Department.

Day or Evening division: Seminars three hours a week.

J.G. Neuspiel

Law 51.488

Socialist Legal Systems

A comparative approach to selected legal problems of the Soviet Union and a number of other socialist states. Marxist concepts of state and law, the Leninist, Stalinist and contemporary interpretations of law and their practical applications.

Prerequisite: One of Law 51.100 (or its equivalents), 51.200, 51.205, 51.386*, 51.450, a course in East European government or in the history of eastern Europe, or permission of the Department.

Not offered 1977-78.

Law 51.490

Directed Studies

A reading or research course for selected students who wish to investigate a particular topic of interest. Available to Third and Fourth year students only.

Prerequisite: Permission of Department.

Law 51.491*

Tutorial in Law

Members of the Department are prepared to give reading courses in selected fields such as: town planning law; the law of armed conflict, neutrality and peacekeeping; legal problems of federalism; Bill of Rights; restitution; occupiers' liability; comparative law topics; east-west trade law.

First term.

Law 51.492*

Tutorial in Law

Members of the Department are prepared to give reading courses in selected fields such as: town planning law; the law of armed conflict, neutrality and peacekeeping; legal problems of federalism; Bill of Rights; restitution; occupiers' liability; comparative law topics; east-west trade law.

Second term.

Law 51.498

Honours Essay

Students in the Combined Honours Program are required to write an Honours Essay in Law or a designated equivalent, unless they are writing the Honours Essay in the other discipline, in which case they are required to take Law 51.490 (Directed Studies). Students are responsible for making their own arrangements for supervision of the Honours Essay, Directed Studies or a designated equivalent.

Graduate Courses Open to Undergraduate Students

Law

51.555 Administrative Law II

51.567* Advanced International Legal Problems

Courses Planned for Summer School and Evening Division, 1977-80

As of publication of this Calendar, the Department hopes to be able to offer the following courses during the Summer sessions and Evening divisions for the next three years. Changes may be made, however, and interested persons are urged to consult the Department and to refer to future issues of the Calendar as they are published.

Summer 1977

51.101*, 51.102*, 51.200, 51.205, 51.220, 51.234, 51.284, 51.324, 51.353, 51.441, 51.463.

Evening Division 1977-78

51.100, 51.101*, 51.200, 51.201, 51.205, 51.210, 51.220, 51.234, 51.284, 51.301*, 51.321, 51.323, 51.324, 51.325, 51.348*, 51.352*, 51.355*, 51.374, 51.380, 51.441, 51.445*, 51.450, 51.455, 51.463.

Summer 1978

51.101*, 51.102*, 51.200, 51.205, 51.220, 51.234, 51.284, 51.324, 51.450.

Evening Division 1978-79

51.100, 51.101*, 51.200, 51.201, 51.205, 51.210, 51.220, 51.234, 51.284, 51.301*, 51.321, 51.323, 51.324, 51.325, 51.348*, 51.352*, 51.355*, 51.374, 51.380, 51.441, 51.445*, 51.450, 51.455.

Summer 1979

51.101*, 51.102*, 51.200, 51.205, 51.220, 51.234, 51.301*, 51.320, 51.354*.

Evening Division 1979-80

51.100, 51.101*, 51.200, 51.201, 51.205, 51.210, 51.220, 51.234, 51.284, 51.301*, 51.321, 51.323, 51.324, 51.325, 51.348*, 51.352*, 51.355*, 51.374, 51.380, 51.441, 51.445*, 51.450, 51.455.

Management Studies

School of Commerce

For details of the programs offered by the School see pp. 320-322.

Courses Offered

■ Finance

Management Studies 42.250*

Introduction to Business Finance

A study of business firms' financing and dividend policy decisions, cost of capital and short-term asset management problems. (Also listed as Economics 43.250*.)

Prerequisites: Economics 43.100 or 43.101, and Accounting 41.100 or Accounting 41.101* and 41.102*.

Day and Evening divisions, First and Second terms: Lectures three hours a week.

Summer 1977, Evening division: Lectures five hours a week.

Management Studies 42.406*

Corporate Finance

An examination of some of the major theoretical issues in corporate finance as well as an examination of certain applied financial management techniques. Topics include: introduction to portfolio theory and the capital asset pricing model, cost of capital, capital structure and dividend policy, capital budgeting under uncertainty, lease financing, mergers and consolidations. (Also listed as Economics 43.406*.)

Prerequisites: Economics 43.200 or 43.201*, 43.220 and Management Studies 42.250*.

Day and Evening divisions, First and Second terms: Lectures two hours a week.

Management Studies 42.410*

Finance and Capital Markets

The workings and structure of Canada's capital markets with particular reference to differing classes of institutional lenders and borrowers; relationships of non-bank financial intermediaries to the banking system, regulatory agencies and the public, the impact of these institutions on corporate financial and national economic policy, access to foreign capital markets and external financing of Canadian economic development. (Also listed as Economics 43.410*.)

Prerequisite: Economics 43.210 or 43.211*.

Day and Evening divisions, First and Second terms: Lectures and seminars three hours a week.

Management Studies 42.411*

Investments

A survey of modern methods of investment analysis with a significant analytical flavour. Topics include: money and capital markets, security valuation, portfolio analysis and capital market efficiency. (Also listed as Economics 43.411*.)

Prerequisite: Management Studies 42.406* (Economics 43.406*); may be taken concurrently.

Day division, Second term: Lectures and seminars two hours a week.

■ Industrial Relations

Management Studies 42.357*

Introduction to Industrial Relations

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada and Canadian public policy in industrial relations. (Also listed as Economics 43.357*.)

Prerequisite: Economics 43.100 or 43.101.

Day and Evening divisions, First and Second terms: Lectures three hours a week.

■ Management and Business Systems

Management Studies 42.290*

Computers in Business

The purpose of this course is to develop understanding of computer technology as it applies to business. By surveying the role of the computer and its impact on various business practices, the student is made aware of the potential benefits and costs. In order that the student be able to communicate with equipment vendors and EDP specialists, current hardware and software technologies are described and discussed. Such technologies will include modes of processing, data base, word processing, data entry, teleprocessing, and mini computers. To appreciate the problems in implementing computer systems, various techniques for acquiring business application software will be discussed. (Also listed as Computing Science 95.290*.)

Prerequisite: Computing Science 95.101* or 95.104*.

Day and Evening divisions, First and Second terms: Lectures three hours a week.

Management Studies 42.291*

Computer Applications in Commerce

The purpose of this course is to introduce the computer as a problem-solving tool in commerce. Program packages for information processing and quantitative analysis are used to illustrate the solution of problems in statistics, planning, finance, cost accounting and marketing. In addition to selecting package programs, students will be required to develop their own solutions using APL and BASIC. Typical areas from which problems will be selected are: time series analysis, questionnaire processing, PERT/critical path, simulation, portfolio analysis, budgeting and inventory control. This course will draw problem material from courses such as Accounting 41.100, 41.200, 41.325*/326*, Economics 43.220 and Management Studies 42.405*, to provide the student with computational abilities useful in his Commerce program. (Also listed as Computing Science 95.291*.)

Prerequisites: Computing Science 95.101* or 95.104*, and Economics 43.220 (may be taken concurrently).

Day division, First term: Lectures three hours a week.

Management Studies 42.391*

Business Data Processing Systems

The purpose of this course is to develop the skills necessary to participate in the construction of business data processing systems. Computing and non-computing students will form project teams to design and implement a particular system. Lectures will be based on case studies and seminars. Student projects will be drawn, where possible, from actual problem areas in the business community. Typical projects will include: inventory control, payroll, general ledger, project cost/accounting, simulation, information retrieval, computer auditing. (Also listed as Computing Science 95.391*.)

Prerequisites: Accounting 41.100, Management Studies 42.250*, Computing Science 95.101* or 95.104*.

Day division, Second term: Lectures three hours a week.

■ **Marketing**

Management Studies 42.208*

An Introduction to Marketing

An overview of the marketing function within the firm is sought. Promotion, product design, pricing and distribution channels are examined as key elements of the marketing mix. Consumer buyer behaviour, trends in retailing, wholesaling, sales force management and marketing research are other topics to be reviewed. Case studies are used to supplement class and reading material.

Prerequisites: Accounting 41.100, Economics 43.100, and Psychology 49.100 or Sociology-Anthropology 56.100; or permission of the instructor.

Day and Evening divisions, First and Second terms: Lectures three hours a week.

Management Studies 42.416

Consumer Behaviour

The traditional socio-psychological theories of consumer behaviour are examined. Stress is put on the current literature and on the fundamental theories and concepts from various disciplines. Topics include: motivation, personality, perception, learning, communication of innovations, attitude theory, role theory, life style analysis, consumerism, etc.

Prerequisite: Management Studies 42.208* or permission of the instructor.

Day division: Lectures and seminars two hours a week.

Management Studies 42.417*

Marketing Research

This first course in marketing research will cover such topics as: research design, questionnaire design, scales, sources of information and error, sampling techniques, basic statistical measures, measures of association, regression, and an overview of multivariate methods. The pragmatic implications of marketing research will be stressed, with the use of case studies and actual data analysis.

Prerequisites: Management Studies 42.208*, Economics 43.220 or permission of the instructor.

Day division, First term: Lectures three hours a week.

Management Studies 42.418*

Marketing Management

This course will emphasize the "managerial" aspects of marketing. Such topics as: market segmentation, social and regulatory aspects in marketing, channels of distribution, industrial marketing, sales force management and other current topics will be discussed in detail.

Prerequisite: Management Studies 42.208* or permission of the instructor.

Day division, Second term.

■ **Organization Theory**

Management Studies 42.358

Organization Theory

A multidisciplinary course focusing on the development of an understanding of the social forces that shape the behaviour of people in organizations. Special attention will be paid to issues such as work satisfaction, productivity, conflict, leadership and control. Various theories of management will be examined as they relate to these issues.

Prerequisites: Sociology-Anthropology 56.100 or Psychology 49.100, Economics 43.100 or 43.101, or permission of the instructor.

Day and Evening divisions: Lectures and discussion group three hours a week.

■ **Production**

Management Studies 42.407*

Applied Economics: Production

An examination of the decision rules for planning production, work force, inventory and for optimal response to sales fluctuations.

Prerequisites: Economics 43.200 or 43.201*, and 43.220. Economics 43.220 may be taken concurrently. Day and Evening divisions, Second term: Lectures two hours a week.

■ **Quantitative Methods**

Management Studies 42.404*

Operations Research I

Linear programming, networks, and such techniques as PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method). (Also listed as Economics 43.404*.)

Prerequisite: Mathematics 69.107*, and 69.117* or 69.127*.

Evening division, First term: Lectures three hours a week.

Management Studies 42.405*

Operations Research II

Dynamic programming inventory models, queuing, simulation, non-linear programming. (Also listed as Economics 43.405*.)

Prerequisites: Management Studies 42.404* or equivalent; Economics 43.220.

Evening division, Second term: Lectures three hours a week.

Management Studies 42.409

Statistical Decision Theory

An examination of Bayesian and classical approaches to decision making under uncertainty for individuals and firms. (Also listed as Economics 43.409.)

Prerequisites: Economics 43.220 and Mathematics 69.107*, and 69.117* or 69.127*.

Not offered 1977-78.

■ **Selected Studies**

Management Studies 42.460*

Topics in Management Studies

Consideration of selected topics in financial management, marketing production, etc.

Prerequisite: Permission of the School of Commerce.

Day division, One term: Two hours a week.

Management Studies 42.490*

Business Policy Seminar

This course focuses upon the management process in business. It examines the functions and responsibilities of managers in the areas of strategy formulation and implementation. It is designed to integrate previous work in the functional disciplines of business administration by developing an overall analytical viewpoint.

Prerequisite: Fourth year Honours Commerce standing.

Day division, Second term: Two hours a week.

Management Studies 42.492

Directed Studies

This course is intended to provide students with the opportunity of carrying out a major research project under the supervision of a faculty member.

Prerequisite: Permission of the School of Commerce.

Mathematics

Bachelor of Arts Programs

The Department of Mathematics (Faculty of Science) offers programs leading to Bachelor of Arts Major and Honours degrees (as well as Bachelor of Science degrees) in both Mathematics and Mathematical Sciences. Also available are combined Major degree programs and a number of combined Honours degree programs such as Economics and Mathematics, German and Mathematics, Geography and Mathematics, Mathematics and Philosophy.

Students in the Bachelor of Arts programs register in the Faculty of Social Sciences.

For full details please consult pp. 278-296.

Department of Political Science

Officers of Instruction

Chairman

Robert J. Jackson

Assistant Chairman

G. Roseme

Co-ordinator St. Patrick's College

D. Bellamy

Supervisor of Graduate Studies

I. Garth Stevenson; Assistant, M.A. Molot

Supervisor of Honours

W.A. Mullins

Supervisor of Majors

Reginald A. Whitaker

Professors Emeriti

R.A. MacKay

Henry B. Mayo

Professors

Claude Ake

Douglas G. Anglin

Bohdan R. Bociurkiw

Robert J. Jackson

Peyton V. Lyon

Kenneth D. McRae

Michael Oliver

Khayyam Z. Paltiel

T. Rakowska-Harmstone

Donald C. Rowat

Radoslav Selucky

V. Subramaniam

Harald von Riekhoff

Associate Professors

Robert E. Bedeski

Nguyen H. Chi

Frederic Kirk

David Kwavnick

Willard A. Mullins

Lynn K. Mytelka

John R. Nellis

George Roseme

Paul Rosen

John H. Sigler

I. Garth Stevenson

Elliot L. Tepper

Jill McCalla Vickers

Michael S. Whittington

Assistant Professors

Jon Alexander

David Bellamy

Jane Jenson

Maureen A. Molot

Jon H. Pammett

L.V. Panitch

Charles Schuetz

Brian W. Tomlin

Reginald A. Whitaker

Conrad J. Winn

Lecturers

Kenneth D. Hart

Glen S. Williams

General Information

Ottawa provides a wealth of resources, both in personnel and in research materials, for the student of government, politics, public administration, and international relations. Undergraduates will be assisted in making the fullest use of these unique advantages of the national capital. The Political Science Department offers courses in the following fields of study: Canadian government and politics, comparative institutions and politics, public administration, international relations, political theory and methodology.

Students should note that it is possible to combine a Major or Honours in Political Science with a pattern of studies, such as urban studies, studies in developing areas, etc. Those wishing to do so should consult the Department for a suggested outline of courses.

Major Programs

A Major in Political Science requires Political Science 47.100; one of 47.230, 47.231, 47.232, or 47.270; and four or more additional courses in the Department.

First year students intending to enter a Major (or Honours) program in Political Science should note that they may take a 200-level course concurrently with Political Science 47.100

A Combined Major, including Political Science, requires Political Science 47.100 and three or more additional courses. Students following Combined Major programs in Political Science may not use related courses as Political Science credits.

Majors should take a number of courses in related Social Sciences. Final year Majors with the required standing, may, with permission, be admitted to Fourth year Honours courses. The entire program must be approved by the Department.

A Major must obtain at least C- in Political Science 47.100 to enter Second year and must maintain an overall average of at least C- in his Political Science courses to continue into Third year. For special supplemental examinations to raise grades, see p. 39.

Honours Programs

The Honours programs may be entered in the First year, or by transfer from Majors programs, if sufficient standing has been obtained. Only students whose past record indicates the ability to meet the Department's language requirement, and to obtain at least a B- in the Honours essay will be recommended for Fourth year Honours. An Honours student may be approved for a Major degree at the end of the Third year if the requirements under the Major program have been completed. The following programs are available.

Honours in Political Science

For full Honours, twenty courses will be required, including at least nine courses in Political Science. The Political Science courses must comprise:

1. Political Science 47.100, 47.231, 47.270, and 47.498;

2. One full course (or two half courses), chosen from 47.200, 47.300*, 47.301*, 47.302*, 47.303*, 47.304*, 47.335*, 47.336*, 47.340, 47.366*, 47.400, 47.401*, 47.402*, 47.404*, 47.406*, 47.409*;

3. One full course or two half courses, chosen from either (a) 47.215, 47.310, 47.312, 47.314*, 47.315, 47.320, 47.321, 47.322, 47.342, 47.405, 47.410, 47.411, 47.420*, 47.421*, 47.422*; or (b) 47.260, 47.360*, 47.361*, 47.365*, 47.366*, 47.460, 47.461*, 47.462*, 47.466*, 47.482*, 47.483*;

4. Three free options, one of which must be a seminar course;

5. Language requirement: The Department requires Honours students to have a knowledge of French. This requirement may be satisfied in one of two ways: (a) Successful completion of a 100 level French course, or its equivalent, preferably French 20.106* or 20.108. Students with a limited background in French should note that it may be necessary for them to take French 20.001 or 20.011 in order to be admitted to 100-level French courses. (b) The Department will conduct language examinations twice each year (November and March). Successful completion of this examination at any time prior to Fourth year will satisfy the language requirement. *Fourth year students are not eligible to take these examinations.* If the examination is attempted and failed, the student must then satisfy the language requirement by undertaking option (a) above.

Students from abroad, whose mother tongue is other than English, or students whose research interests require another language, may obtain permission from the Supervisor of Honours to substitute this language for French.

Candidates present a graduation essay on some topic involving independent investigation (Political Science 47.498); they may be examined orally on this essay and must receive at least B- in this course. They must select a minor field or fields, preferably in Economics, History, Law, Philosophy, Sociology or Psychology.

Combined Honours

Students intending to enter a program combining Political Science with another discipline should in their First year take Political Science 47.100 and the introductory course in the other discipline. For Combined Honours at least six courses in Political Science will be required, including:

1. Political Science 47.100, 47.231, 47.270 or its equivalent;

2. The equivalent of two courses, chosen from 2, 3 (a) or (b), listed for the full Honours program. The two courses may be chosen from one list;

3. One additional course.

Students must meet the same Fourth year requirements in each Department as for full Honours, except that the graduation essay may be written for either Department, and preferably should make use of both disciplines.

Students following a combined Honours program may not use related courses as Political Science credits.

Combined Honours, Journalism and Political Science

Students may select a course pattern which will lead, at their option, to either the degree of B.A. with Combined Honours in Journalism and Political Science or B.J. with Political Science. At the end of the Third year students will elect to write their Honours Essay in either Political Science or Journalism. Should they select Political Science they will be awarded the degree of B.A., and should they select Journalism they will be awarded the degree of B.J. with Political Science.

1. Admission requirements: See p. 64.

2. Course requirements: Students in this program must complete a total of twenty-one courses in four years. The courses consist of subjects from those listed as follows:

First Year: Journalism 28.100 and 28.101*; Political Science 47.100, a First-year French course, two approved options;

Second Year: Journalism 28.200 and 28.220; Political Science 47.231* and 47.270; an approved course in Canadian History. (Students who expect to practise Journalism in another country may be advised to choose a different history course);

Third Year: Journalism 28.320 and 28.321* and 28.351*; two approved courses in Political Science; optional courses equivalent to one and a half courses.

Fourth Year: Journalism 28.421 or 28.490; a Fourth-year seminar in Political Science; either Journalism 28.498 (in which case the degree will be a B.J.) or Political Science 47.498 (in which case the degree will be a B.A., with combined Honours); two approved options.

3. Language requirement: See item 5 under Honours description.

4. Standing: A student in the Journalism-Political Science program must maintain a standing sufficiently high at all times to satisfy the standards of both the School of Journalism and the Department of Political Science. Please refer to the statements of standing on p. 64 (Journalism) and p. 58 (Arts). Students must meet the same Fourth-year requirements for each Department as for full Honours, except that the graduation essay may be written for either Department, and preferably should make use of both disciplines.

Combined Honours in Political Science and Sociology

Students in this program are required to take six courses in Political Science including Political Science 47.100, 47.231, a Fourth year seminar, and 47.498 (if the Honours Essay is written in Political Science). In addition, the student must complete one of the following methodology sequences: (a) in the Second year, Political Science 47.270; in the Third year, Sociology 53.370; or (b) in the Second year, Sociology 53.200; in the Third year, Political Science 47.470. Political Science 47.470 may not be counted as the required Fourth year seminar course in Political Science.

Graduate Program

The Department of Political Science offers studies leading to the degree of Master of Arts and to the degree of Doctor of Philosophy. For further details consult the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The regulations governing these programs are listed under the St. Patrick's College section, p. 213.

Courses Offered

■ First year

Political Science 47.100

Introduction to Political Science

Modern political ideas and institutions, with particular attention to Canada, Britain, and the United States.

Day and Evening divisions: Lectures and discussions three hours a week.

B.R. Bociurkiw, K.D. Hart, L.K. Mytelka, G. Roseme, C. Schuetz, G.S. Williams and others

Summer 1977, Day division: Lectures and discussion ten hours a week.

G. Roseme

Summer 1977, Evening division: Lectures and discussion five hours a week.

E.L. Tepper

■ Second Year: Majors and Honours

Political Science 47.200

Canadian Government and Politics

A survey of the political process and political institutions in Canada.

Prerequisite: Political Science 47.100, or permission of the Department. Third-year students in another discipline will normally be permitted to take this course without having taken Political Science 47.100.

Day and Evening divisions: Lectures and discussion three hours a week.

D. Bellamy, D. Kwavnick, M.A. Molot, K.Z. Paltiel, L.V. Panitch, G.S. Williams

Summer 1977, Day division: Lectures and discussion ten hours a week.

I.G. Stevenson

Political Science 47.215

Comparative Politics

An examination of concepts, theories and methods employed in the study of comparative politics, with particular emphasis on cross-national comparison of regimes and some of the major issues in the field.

Prerequisite: Political Science 47.100.

Day division: Lectures and discussion three hours a week.

F. Kirk, E.L. Tepper

Political Science 47.230

History of Political Thought

A study of political philosophy and the problems and themes it seeks to clarify. Seminal ideas considered will be those of Plato, Aristotle, Machiavelli, Bacon, Hobbes, Locke, Rousseau, Burke, Hume, Bentham, J.S. Mill and Marx. (Only one of Political Science 47.230, 47.231 or 47.232 may be taken for credit.)

Prerequisite: Political Science 47.100.

Day and Evening divisions: Lectures and discussion three hours a week.

P.L. Rosen, J.M. Vickers

Summer 1977, Day division: Lectures and discussion ten hours a week.

P.L. Rosen, J.M. Vickers

Political Science 47.231

History of Political Thought

A survey of the development of Western political theory and related aspects of intellectual history from classical times to the end of the eighteenth century. Readings from Plato, Aristotle, Machiavelli, Bodin, Hobbes, Locke, Rousseau, Burke and others. (For Honours and graduate students in any discipline. Only one of Political Science 47.230, 47.231 or 47.232 may be taken for credit.)

Prerequisite: Political Science 47.100, or permission of the Department.

Day division: Lectures and discussion three hours a week.

C. Ake, R.A. Whitaker

Political Science 47.232

Introduction to Political Theory

A survey of continuing problems in political theory, including the nature and role of politics and of political theory; types of political theory; and some basic concepts. (Only one of Political Science 47.230, 47.231, or 47.232 may be taken for credit.)

Prerequisite: Political Science 47.100, or permission of the Department.

Not offered 1977-78.

Political Science 47.260

International Politics

A survey of the structure of the international system; concepts such as the balance of power, collective security and sovereignty; the formulation and instruments of foreign policy.

Prerequisite: Political Science 47.100, or permission of the Department.

Day and Evening divisions: Lectures and discussion three hours a week.

D.G. Anglin, P.V. Lyon, C. Schuetz

Political Science 47.270

Political Inquiry

This course introduces the student to the elements of systematic political analysis. It covers all present modes of inquiry in the discipline, including survey research methods and their statistical background.

Prerequisite: Political Science 47.100.

Day and Evening divisions: Lectures two hours a week, laboratory or discussion one hour a week.

N.H. Chi, K.D. Hart, C.J. Winn

Summer 1977, Evening division: Lectures and discussion five hours a week.

N.H. Chi

■ Third Year: Majors and Honours

Political Science 47.300*

Provincial Government and Politics

A comparative examination of the political process and political institutions in the Canadian provinces.

Prerequisite: Political Science 47.200, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

J.H. Pammett

Political Science 47.301*

Intergovernmental Relations

An examination of federal-provincial relations, including federal-urban and interprovincial relations.

Prerequisite: Political Science 47.200, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

I.G. Stevenson

Political Science 47.302*

Canadian Municipal Government

An examination of the nature and problems of Canadian municipal government, including metropolitan and regional government and provincial-municipal relations.

Prerequisites: Political Science 47.100, and preferably also 47.200, or completion of Second year in another discipline.

Evening division, First term: Lectures and discussion three hours a week.

Summer 1977, Evening division: Lectures and discussion five hours a week.

J. Jenson

Political Science 47.303*

Canadian Urban Politics

An examination of the nature and problems of Canadian urban politics.

Prerequisite: Political Science 47.302*, or permission of the instructor.

Evening division, Second term: Lectures and discussion three hours a week.

Political Science 47.304*

Political Parties and Elections in Canada

An examination of the evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.

Prerequisite: Political Science 47.200, or a previous course in the political process.

Day division, First term: Lectures and discussion three hours a week.

K.Z. Paltiel

Political Science 47.310

Government and Politics in Africa

The evolution and functioning of African political systems, with emphasis on recent developments in West Central and East Africa.

Prerequisite: Political Science 47.100.

Day division: Lectures and discussion three hours a week.

D.G. Anglin, J.R. Nellis

Political Science 47.312

Government and Politics of East Asia

The evolution and functioning of the political systems of China, Japan, and Korea.

Prerequisite: Political Science 47.100, and preferably 47.215.

Not offered 1977-78.

Political Science 47.313*

Women in Politics: A Comparative Perspective

An examination of the participation of women in politics, especially in developed democracies. Special emphasis will be placed on the structural and cultural impediments to full participation in the Canadian context, using primary data.

Prerequisites: Political Science 47.100, and one of 47.200, 47.215 or 47.270.

Evening division, Second term: Lectures and discussion three hours a week.

J.M. Vickers

Political Science 47.314*

Eastern European Politics

A comparative examination of political institutions and processes in the Communist states of Eastern Europe. Prerequisite: Political Science 47.100, and preferably 47.215.

Not offered 1977-78.

Political Science 47.315

Government and Politics of South and South East Asia

This course on developing areas will acquaint the student with the patterns of colonial history, emergent political regimes and problems of development and foreign policy in the countries from Pakistan through the Philippine Islands, with special emphasis on problems of political change.

Prerequisite: Political Science 47.100, and preferably 47.215.

Evening division: Lectures and discussion three hours a week.

E.L. Tepper

Political Science 47.320

Soviet Government and Politics

A study of the environment and political culture of the Soviet political system; political socialization, communication, and elite recruitment; the structure and functioning of the Communist Party and governmental institutions; policy making and implementation, capabilities of the Soviet political system.

Prerequisites: Political Science 47.100, and preferably 47.215, or History 24.260.

Day division: Lectures and discussion three hours a week.

B.R. Bociurkiw

Political Science 47.321

Government and Politics of Western Europe

A survey of the political processes and institutions in the democracies of Western Europe, with emphasis on Britain, France, Italy and the German Federal Republic. Prerequisite: Political Science 47.100 and preferably 47.215.

Evening division: Lectures and discussion three hours a week.

F. Kirk

Summer 1977, Evening division: Lectures and discussion five hours a week.

R.J. Jackson

Political Science 47.322

Government and Politics of the United States

American political thought, constitutional development, and the governmental process.

Prerequisite: Political Science 47.100, and preferably 47.215.

Day division: Lectures and discussion three hours a week.

J. Alexander

Summer, 1977, Day division: Lectures and discussion ten hours a week.

John Lees

Political Science 47.330*

Politics and Literature

A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, The impact of literature upon politics, the peculiar value of literature in the study of politics, its shortcomings.

Prerequisites: Political Science 47.100 and permission of the instructor.

Evening division, Second term: Lectures and discussion three hours a week.

G. Roseme

Political Science 47.331*

Politics and Psychoanalytic Thought

An investigation and critique of the contribution of psychoanalytic thought to political and social theory. Primary emphasis will be placed on the ideas of Freud. Among others to be considered will be Abraham, Adorno, Brown, Erikson, Ferenczi, Fromm, Habermas, Horney, Marcuse, Murphy, Rank, Reich, Róheim and Sullivan.

Prerequisite: Political Science 47.230 or Psychology 49.261*, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

P.L. Rosen

Political Science 47.333

Modern Political Thought and Ideology

An analysis of leading political concepts and ideologies since 1800, including utilitarianism, liberalism, conservatism, socialism and fascism.

Day division: Lectures and discussion three hours a week.

W.A. Mullins

Political Science 47.335*

Sources and Development of Canadian Political Ideas

An examination of the sources and development of Canadian political ideas and their relationship to political institutions and policies.

Prerequisite: Political Science 47.200, or permission of the instructor.

Not offered 1977-78.

Summer, 1977, Evening division: Lectures and discussion five hours a week.

R.A. Whitaker

Political Science 47.336*

Canadian Political Culture and Ideologies

An analysis of the elements of contemporary Canadian political culture, with special reference to the social bases of ideologies and to regional differences within Canada.

Prerequisite: Political Science 47.335*, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

J.H. Pammett

Summer, 1977, Evening division: Lectures and discussion five hours a week.

R.A. Whitaker

Political Science 47.340

Canadian Public Administration

A survey of the political and social impact of the federal public service in Canada, including the nature of bureaucracy, its role in policy making, and social and political control of the public service in Canada.

Prerequisite: Political Science 47.200, or permission of the instructor.

Day and Evening divisions: Lectures and discussion three hours a week.

D.C. Rowat, V. Subramaniam, M.S. Whittington

Political Science 47.342

Comparative Public Bureaucracy

A comparative study of the historical evolution of bureaucracy in Western Europe under absolute monarchy; the interaction of democracy and bureaucracy in Europe and North America; the transplanting of British and French bureaucratic institutions; and the significance of bureaucracy in developed and developing societies.

Prerequisite: Political Science 47.100.

Evening division: Lectures and discussion three hours a week.

V. Subramaniam

Political Science 47.360*

International Institutions

Origins, structure and functioning of international institutions with emphasis on the United Nations.

Prerequisite: Political Science 47.260, or permission of the instructor.

Day division; First term: Lectures and discussion three hours a week.

Political Science 47.361*

Theories of International Politics

A survey of theoretical approaches to the study of international politics including an examination of the major concepts used for analysis and explanation in the field.

Prerequisite: Political Science 47.260 or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

H. von Riekhoff

Political Science 47.365*

Comparative Study of Foreign Policy

An examination of the utility of comparative analysis in the study of the objectives; strategies; and decision-making processes involved in the foreign policies of states.

Prerequisite: Political Science 47.260 or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

Political Science 47.366*

Canadian Foreign Policy

An examination of the traditions, domestic influences, objectives, capabilities and decision-making processes, and analysis of selected contemporary issues.

Prerequisite: Political Science 47.260, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

P.V. Lyon

■ **Fourth Year: Honours and Graduate**

Third-year Honours students, and Majors with equivalent standing, may with permission of the Department be admitted to these seminars.

Political Science 47.400

Topics in Canadian Government and Politics

In 1977-78 two separate seminars will be offered.

Section A: Political Economy of Canada. An examination of selected issues in Canadian political economy including the role of the state in the Canadian economy, the political aspects of foreign ownership, and economic structure and political change.

M. A. Molot

Section B: Canadian Political Institutions. A seminar on selected topics on institutions of Canadian Government at the federal level.

D. Kwavnick, D. Lewis

Prerequisite: Political Science 47.200.

Day division: Seminar three hours a week.

Political Science 47.401*

Policy Making in Canada

A seminar on the processes and structures of public policy making in Canada, including the role of: the Cabinet, Economic Council, Science Council, planning, programming and budgeting, royal commissions, task forces, private consulting firms, and academics.

Prerequisites: Political Science 47.200 and 47.340, or permission of the instructor.

Day division, First term: Seminar three hours a week.
G. S. Williams

Political Science 47.402*

Policy Seminar

A seminar on policy making and implementation in a substantive area, that will vary each year.

Prerequisite: Political Science 47.401*, or permission of the instructor.

Day division, Second term: Seminar three hours a week.
M. S. Whittington

Political Science 47.403*

Politics and the Media

A seminar on the role of the mass media in the Canadian political system.

Prerequisite: Political Science 47.200, or permission of the instructor.

Not offered 1977-78.

Political Science 47.404*

Interested Groups in Canadian Politics

A seminar on the role of organized groups in the political process with special reference to Canada.

Prerequisite: Political Science 47.200, or permission of the instructor.

Day division, Second term: Seminar three hours a week.

D. Kwavnick

Political Science 47.405

Federalism

A seminar on Canadian federalism interpreted in the light of various theoretical approaches and experience elsewhere, particularly in Australia, Germany, Switzerland and the United States.

Prerequisite: Political Science 47.200, or permission of the instructor.

Day division: Seminar three hours a week.

I. G. Stevenson

Political Science 47.406*

Legislative Process in Canada

A seminar on the role of Parliament and of the individual M.P. in terms of policy making, representation and the passage of legislation.

Prerequisite: Political Science 47.200, or permission of the instructor.

Not offered 1977-78.

Political Science 47.409*

French Canadian Politics

A seminar on the politics and institutions of French Canada including social and political philosophy and nationalism.

Prerequisites: Political Science 47.200 and permission of the instructor.

Day division, First term: Seminar three hours a week.

D. Kwavnick

Political Science 47.410

Politics of Developed Societies

A seminar on the relationship between state and society in developed nations. Particular emphasis is given to the study of changes in social structure, their implications for consensus or conflict, the role of parties and interest groups, and public policy.

Prerequisite: A Third-year course in the politics of developed areas, or permission of the instructor.

Day division: Seminar three hours a week.

L.V. Panitch

Political Science 47.411

Politics of Developing Societies

Examination of political change, violent and non-violent. Roles of parties, elites, the military and institutions in developing societies. Strategies and problems of development.

Prerequisite: A Third-year course in the politics of developing countries or permission of the instructor.

Day division: Seminar three hours a week.

J.R. Nellis

Political Science 47.420*

President and Congress in the United States

An examination of domestic policy making in the United States in relation to Congress and the Presidency.

Prerequisites: Political Science 47.100 and 47.322, or permission of the instructor.

Day division, Second term: Seminar three hours a week.

J. Alexander

Political Science 47.421*

Parties and Pressure Groups in the United States

An examination of the two-party system in the United States, including the decentralized nature of the parties, minor parties, and the role of parties and pressure groups in the legislative process.

Prerequisites: Political Science 47.100 and 47.322, or permission of the instructor.

Day division, First term: Seminar three hours a week.

J. Alexander

Political Science 47.422*

American Constitutionalism

A seminar on the American Constitution as a legal and political instrument, the role of the Supreme Court in the governmental process, and the extra-legal sources of constitutional law.

Prerequisites: Political Science 47.100 and 47.322, or permission of the instructor.
Not offered 1977-78.

Political Science 47.430

Modern Political Thought

Selected thinkers and concepts of the nineteenth and twentieth centuries. Special emphasis will be given to the problems of political obligations and political dissent.
Prerequisite: Political Science 47.230, or permission of the instructor.
Not offered 1977-78.

Political Science 47.431*

Marxist Thought

An examination of Marxism with special emphasis on Marx and Engels, and including writings from all periods of their work.

Prerequisite: Political Science 47.230, 47.231, 47.232 or 47.333, or permission of the instructor.

Day division, Second term: Seminar three hours a week.

R.A. Whitaker

Political Science 47.432*

Contemporary Marxism

An examination of all relevant interpretations of Marx's theory including evolutionary socialism, Leninism, Trotskyism, Stalinism, Maoism and the main schools of contemporary revisionism.

Prerequisite: Political Science 47.431*

Not offered 1977-78.

Political Science 47.435

The Conflict of Ideas in Contemporary Society

A seminar on the currents of conflicting political thought in the present day. Special attention will be given to the crises of authority and selected forms of contemporary radicalism and conservatism.

Prerequisite: Permission of the instructor.

Day division: Seminar three hours a week.

J.M. Vickers

Political Science 47.446

Theories of Public Administration

A seminar on theories of public administration including comparative theories.

Prerequisite: Political Science 47.340.

Day division: Seminar three hours a week.

D.C. Rowat

Political Science 47.460

Analysis of International Politics

Problems involved in research on key issues in theory and policy in international politics, including literature review and an assessment of alternative research strategies.

Prerequisite: Political Science 47.260 or permission of the instructor.

Day division: Seminar three hours a week.

H. von Riekhoff

Political Science 47.461*

Soviet Foreign Policy

An examination of the foreign policy of the Soviet Union since 1917, with special emphasis on trends since the Second World War.

Prerequisites: Political Science 47.260 and 47.320, or permission of the instructor.

Not offered 1977-78.

Political Science 47.462*

International Communist Movement

An examination of the International Communist Movement since 1917, with special emphasis on relations among the Communist states.

Prerequisites: Political Science 47.260 and 47.320, or permission of the instructor.

Day division, First term: Seminar three hours a week.

T. Rakowska-Harmstone

Political Science 47.466*

American Foreign Policy

An examination of issues and trends in American foreign relations since the Second World War.

Prerequisite: Political Science 47.260.

Day division, Second term: Seminar three hours a week.

J. Alexander

Political Science 47.470

Political Research Design and Data Analysis

The framing of quantitative research problems, including hypothesis formation and testing, application of models, sampling, scaling techniques, and computer and data processing techniques. Specific application will be made to such fields as voting, legislative, judicial and administrative behaviour.

Prerequisite: Permission of the instructor.

Evening division: Seminar three hours a week.

N.H. Chi

Political Science 47.482*

International Politics of Africa

The interactions of African states within the African sub-system and with other actors in the international system.

Prerequisite: Political Science 47.260 or 47.310 or permission of the instructor.

Evening division, Second term: Seminar three hours a week.

D.G. Anglin

Political Science 47.483*

Foreign Policies of Major East Asian Powers

The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.

Prerequisite: Political Science 47.260 or 47.312 or permission of the instructor.

Not offered 1977-78.

Political Science 47.490

Tutorial in a Selected Field

Tutorials or reading courses on selected topics may be arranged with the permission of the Chairman of the Department and agreement of the instructor.
Day division. Tutorial hours arranged.

Political Science 47.491*

Tutorial in a Selected Field

Tutorials or reading courses on selected topics may be arranged with the permission of the Chairman of the Department and agreement of the instructor.
Day division, First term: Tutorial hours arranged.

Political Science 47.492*

Tutorial in a Selected Field

Tutorials or reading courses on selected topics may be arranged with the permission of the Chairman of the Department and agreement of the instructor.
Day division, Second term: Tutorial hours arranged.

Political Science 47.498

Honours Graduation Essay

Day division: Tutorial hours arranged.

■ **Graduate Courses**

Fourth-year Honours students may, with permission of the departmental Supervisor of Graduate Studies, be admitted to the following 500-level Political Science seminars, which are more fully described in the Graduate Studies and Research Calendar:

Political Science

- 47.500* Canadian Local Government and Politics
- 47.501* Provincial Government and Politics
- 47.502* Comparative Local Government
- 47.504* Urban Politics
- 47.505 Comparative Government
- 47.506* Problems of Canadian Government I
- 47.507* Problems of Canadian Government II
- 47.510 The Political Process in Canada
- 47.514* Comparative Communist Politics, Theory and Practice
- 47.515* Comparative Communist Politics, Selected Aspects
- 47.516* Selected Problems in Soviet Politics
- 47.517* Selected Problems in African Politics
- 47.520* Nationalism
- 47.521* Multiculturalism
- 47.525* Problems in American Government I
- 47.526* Problems in American Government II
- 47.530 Political Theory
- 47.532* Selected Topics in Political Theory
- 47.533* Selected Topics in Political Theory
- 47.535 The Canadian and American Political Traditions
- 47.540 Problems in Canadian Public Administration
- 47.544* Public Administration in Developed Western Countries
- 47.545* Public Administration in Developing Countries
- 47.547 Decision Theories and Policy Studies
- 47.550 Problems in Western European Politics

47.560 Theory and Research in International Politics

47.561* Canadian Foreign Policy

47.570 Advanced Research Methods

47.581* Foreign Policies of African States

47.585* Foreign Policy Analysis

47.586* Strategy

47.587* Problems in International Organization

47.589* Problems in International Politics

Related Courses

Subject to *prior* approval by the supervisor of the Major or Honours program, a student may use one course in a related discipline as a Political Science credit. This permission will be granted only if the content of the transfer course is very closely related to Political Science and if the Political Science Department does not itself offer a comparable course. Under this provision, Law 51.210, Theory of Law and Politics, may be counted as a Political Science credit.

Courses Offered at St. Patrick's College

Political Science

47.100 Introduction to Political Science

47.200 Canadian Government and Politics

47.230 History of Political Thought

47.260 International Politics

47.270 Political Inquiry

Courses Planned for Summer School and Evening Division, 1977-80

Summer 1977

47.100, 47.200, 47.230, 47.270, 47.302*, 47.321, 47.322, 47.335*, 47.336*.

The introductory course is offered in both Day and Evening sections in the summer, as well as the regular academic year. In the winter session Political Science 47.200, 47.230, 47.260, 47.270 and 47.340, are offered in Day and Evening sections. It is expected that 300-level courses will be offered in the Evening at least once in a three-year period, and that five 400-level seminars will be offered in the Evening during the calendar year. Specific course offerings will depend on faculty availability and student interest and demand.

Department of Psychology

Officers of Instruction

Chairman
M. Marshall

Chairman, Graduate Committee
H. Anisman

Chairman, Undergraduate Committee
R.B. Wells

Professors
R.M. Knights
M.E. Marshall
P.D. McCormack
T.J. Ryan
L.H. Strickland
T.N. Tombaugh
F.R. Wake
R.A. Wendt

Associate Professors
D.A. Andrews
J.C. Barefoot
D.K. Bernhardt
J.F. Campbell
W.L. Croll
R.F. Dillon
M.N. Donald
P.A. Fried
R.D. Hoge
J.B. Kelly
A.B. Laver
D.C. McIntyre
A. Moffitt
B. Pappas
J. Partington
W.M. Petrusic
W.E. Walther
W.G. Webster
D.W. Zimmerman

Assistant Professors
H. Anisman
E.J. Burwell
H.B. Ferguson
R.F. Hoffman
W.D. Jones
N. Spanos
J. Tombaugh
R.B. Wells

Instructors
C.S.D. Day
R. Flewelling
G.E. Goldberg
B.C. McRae
B. Millman
A. Turnbull
J. Turner

Pre-School Director
M. Barnett

Adjunct Professors
P.E. Gendreau, *Rideau Correctional Centre*
J. Goodman, *Children's Hospital of Eastern Ontario*
D. Peters, *University of Ottawa*
I. Rootman, *Department of National Health and Welfare*
H.M. Simpson, *Traffic Injury Research Foundation of Canada*
R. Trites, *Royal Ottawa Hospital*

Research Associates
E. Corbin, *Statistics Canada*
P. Firestone, *Children's Hospital of Eastern Ontario*
L. Gendreau, *Brockville Psychiatric Hospital*
A. Smith, *Children's Hospital of Eastern Ontario*

General Information

The Department of Psychology offers three different undergraduate programs, two in the Faculty of Social Sciences and one in the Faculty of Science. The programs in the Faculty of Social Sciences are the Major B.A. program in Psychology (a minimum of fifteen full-course credits after Senior Matriculation) and the Honours B.A. program in Psychology (a minimum of twenty full-course credits after Senior Matriculation). In the Faculty of Science the Department offers an Honours program in Psychology. In addition an Honours B.J. in Journalism and Psychology is offered in conjunction with the School of Journalism. See pp. 63-64.

The Honours programs are designed for students intending to do graduate work in Psychology. It has been found that students who do not have at least a B average have little chance of being admitted to graduate schools in Psychology and have difficulty completing the Honours thesis.

For a degree in Psychology it is recommended that the equivalent of Grade 13 Mathematics and English be included in the student's High School program.

Psychology 49.100 is required of all students wishing to take further courses in the Department. The following are basic "core" courses: Psychology 49.200*, 49.205* (or 49.305), 49.210*, 49.220*, 49.250*, 49.260*, 49.270*, and 49.300* (or 49.301* or 49.302*). In most cases there are more specialized "branching" courses following upon these basic courses.

There is little distinction made between Second and Third year courses in the Department. (Many 200-level courses are taken by students in the Third year and some 300-level courses are taken in the Second.)

The Department requires students in the B.A. programs to take at least one full-course credit in each of at least three departments or areas outside of Psychology. Of these, at least two must be taken at the 100 level or above in departments or interdisciplinary areas outside

of the Faculty of Social Sciences. In the credits counted towards the degree, no student may offer standing in more than seven credits below the 200 level (including Psychology 49.100) in the Major program or in the B.Sc. Honours program, nor more than nine such courses in the B.A. Honours program.

Major or Honours students in the B.A. program in Psychology may if they wish offer Computing Science 95.101* (p. 404) as one of their optional half credits in Psychology (but not to replace any of the specified Psychology courses). Students wishing to take advantage of this option should notify the Psychology Department undergraduate office on the appropriate form within two months of registration in the course.

The Department of Psychology normally calculates Grade Point Averages on the basis of all Psychology courses taken at Carleton in which standing is offered for the purposes of graduation. The Department does not accept the transfer of letter grades from other Universities, excepting courses taken under the terms of reciprocal agreements (see p.36), although appropriate credit will be granted for acceptable courses taken elsewhere.

While students may enrol as part-time students in the B.A. programs in the Psychology Department, they should be aware of the following:

1. the Faculty requirements limiting to seven years the time between completion of the First year requirements and graduation;
2. the impossibility of completing the required Honours courses in the Evening sessions.

Major Program

This alternative is intended for the student who is not planning a career as a psychologist, but who wishes a liberal arts education with several courses in Psychology.

The requirement for a concentration in Psychology is six course credits in Psychology and the maximum allowable is seven Psychology course credits; that is, all students must offer standing in at least eight non-Psychology option credits in their total of fifteen required for the degree.

Students who decide to train for a career as psychologists are advised to transfer to the Honours program not later than the end of the Second year. Students who are considering this possibility should choose courses that are required for Honours Psychology students in the Second year.

The undergraduate courses in Psychology have been designed to allow students a wide choice of subject areas as well as the opportunity to investigate particular content areas in depth.

The departmental requirements for a Major in Psychology are:

1. Psychology 49.100

2. Five of Psychology 49.200*, 49.205*, 49.210*, 49.220*, 49.250*, 49.260*, 49.270*, 49.300*, 49.301*, or 49.302* (only one of the latter three courses may be credited towards this requirement;

3. Two and one-half additional course credits in Psychology.

Note:

Psychology 49.305 may be substituted for 49.205* in 2, in which case only two additional course credits in Psychology are required in 3.

The departmental requirements for a Major program combining Psychology with another discipline are the same as for a Major, with the exception that, under 3 above, only one and one-half additional course credits in Psychology are required, for a minimum offering of five course credits in Psychology. The maximum remains at seven course credits.

Honours students who are considering reverting to the Major program should not include more than seven Psychology credits in the first three years.

Honours Programs

To teach Psychology at a university, to practise Psychology as a profession, or to conduct independent psychological research, a graduate degree (usually the Ph.D.) is the customary requirement. Several provinces, including Ontario, and many states have laws which require, in effect, that individuals representing themselves as psychologists must have received a Ph.D. in psychological studies.

The Honours programs in Psychology are designed to give students who are preparing for graduate studies in Psychology an opportunity to learn and evaluate the foundations of the science. They provide adequate preparation for graduate studies leading to a career in Psychology, whatever the student's area of interest.

B.A. with Honours in Psychology

The candidate for a B.A. with Honours in Psychology must offer standing at the First year level in the Faculty of Arts and nine credits for Psychology courses, with remaining courses optional. (A maximum of twelve credits in Psychology may be offered for the degree of B.A. with Honours in Psychology.) The nine Psychology course credits must include:

1. Psychology 49.100;

2. All of Psychology 49.210*, 49.220*, 49.250*, 49.260* and 49.270*;

3. One of Psychology 49.300*, 49.301*, 49.302* or 49.303*;

4. Psychology 49.305;

5. Psychology 49.200*, and one of 49.201*, 49.202*, 49.203* or 49.204*;

6. One of the following Honours Seminar sequences: 49.306* and 49.307* (History); 49.315* and 49.316* (Social); 49.325 (Physiological); 49.345* and 49.346* (Community); 49.355* and 49.356* (Developmental); 49.365* and either 49.261* or 49.262* (Personality); 49.375* and 49.376* (Learning).

7. Psychology 49.498;

8. One additional course credit in Psychology.

Recommended sequence for B.A. Honours

First Year

Psychology 49.100.

Second Year

1. Psychology 49.200*;

2. Four of Psychology 49.210*, 49.220*, 49.250*, 49.260*, 49.270*;

3. One half credit in Psychology (either in remaining core course from 2 or one of 49.201*, 49.202*, 49.203* or 49.204*).

Third Year

1. Psychology 49.305;

2. An Honours Seminar sequence: 49.306*, 49.307*; 49.315*, 49.316*; 49.325; 49.345*, 49.346*; 49.355*, 49.356*; 49.365* and either 49.261* or 49.262*; 49.375*, 49.376*.

3. One of the following: 49.300*, 49.301*, 49.302*, or 49.303*;

4. One half credit in Psychology (either one of 49.201*, 49.202*, 49.203* or 49.204* or remaining core course).

An Honours student may take one of Psychology 49.201*, 49.202*, 49.203*, 49.204* or 49.308 in Second year if the prerequisites are met and such a program choice is approved.

Fourth Year

1. Psychology 49.498;

2. One additional credit in Psychology.

In addition to the required Honours sequence in the Third year, Honours students should consider taking another (different) Honours sequence (or half thereof) in the Fourth year.

The remaining eleven credits may be taken in any approved discipline provided that:

1. The total number of Psychology credits is not more than twelve;

2. The total number of credits below the 200 level is not more than nine;

3. There are full credits in at least three disciplines or interdisciplinary areas in addition to Psychology;

4. At least two of the credits indicated in 3 are taken at the 100 level or beyond in departments or interdisciplinary areas outside of the Faculty of Social Sciences;

5. All courses from outside the Faculties of Arts, Science and Social Sciences meet with Departmental approval.

Notes:

1. A student registered in the four year B.A. program with Honours in Psychology may, on request, graduate at the end of the Third year of studies, as a B.A. with a Major in Psychology, provided the requirements for graduation in the Three year Major program (including the requirement of a maximum of seven credits in Psychology) are met.

2. Optional courses may be in Psychology, or any other subject.

3. Students who transfer into the Fourth year of the Honours Program who do not have credits in statistics and experimental psychology, will not be able to complete the requirements for the degree in one year.

Combined Honours

All students in the Combined Honours program must present an Honours thesis.

The Psychology requirements in Combined Honours programs include seven credits in Psychology when combined with Anthropology, Sociology, Philosophy, Mathematics, Linguistics or Economics and eight credits (including Psychology 49.498) in Psychology when combined with any other discipline.

In all cases requirements 1, 5 and 6 must be offered. Requirement 4 must be offered except in the case of Sociology explained below. In all cases requirement 8 of the B.A. Honours requirements (one additional course credit in Psychology) is removed (except when the thesis is completed in Sociology as outlined below).

For Combined Honours with Philosophy, Linguistics, Anthropology or Economics, if the thesis is completed in Psychology only two credits are required from 2 and 3 of the B.A. Honours requirements. If the thesis is completed in Economics, 2 and 3 are required.

For Combined Honours with Sociology, if the thesis is completed in Psychology, 49.210* and one and a half additional credits are required from 2 and 3 of the B.A. Honours requirements. If the thesis is completed in Sociology then Sociology 53.370 will replace Psychology 49.305 and 2, 3 and 8 will be required in Psychology.

B.Sc. with Honours in Psychology

First Year

1. Mathematics 69.107* and 69.117* or 69.127* (or equivalent prerequisites for 69.250 or for 69.217* and 69.257*/258*).

2. One of Biology 61.100 or 61.101, Chemistry 65.100, Physics 75.100 or 75.105;

3. Psychology 49.100 as the Social Science elective;

4. Two additional credits from Science, Social Sciences or Arts.

Required courses beyond First year, and the sequence in which it is strongly suggested they be taken, are as follows:

Second Year

1. Psychology 49.200*, 49.220*, 49.250* and 49.270*;

2. Mathematics 69.250 (or 69.217* and either 69.258* or 69.257* for students planning to take further courses in Mathematics);

3. A course in the arts or social sciences other than Psychology;

4. Optional course.

Note:

Students who wish to substitute Psychology 49.305 in 2 must offer in 4 a course above the First year level in Biology, Mathematics, Chemistry or Physics chosen with the approval of the Department of Psychology.

Third Year

1. One Honours Seminar sequence credit (Psychology 49.325, 49.355* and 49.356*, or 49.375* and 49.376*);

2. One of Psychology 49.201*, 49.202* or 49.204* and one of Psychology 49.300*, 49.301*, 49.302* or 49.303*;

3. One optional credit in Psychology;

4. A course credit in the arts or social sciences other than Psychology;

5. A course credit above the First year level in Biology, Mathematics, Chemistry or Physics chosen with the approval of the Department of Psychology.

Note:

B.Sc. Honours students are urged to consult the calendar section on General Regulations of the Science Faculty, pp. 245-251.

Fourth Year

1. Psychology 49.498;

2. One credit in Psychology chosen from the following Science continuation courses: Psychology 49.221*, 49.222*, 49.251*, 49.252*, 49.255*, 49.256*, 49.271*, 49.321*, 49.327*, 49.330*, 49.331*, 49.380*;

3. One optional credit in Psychology;

4. One course credit above the First year level in Biology, Mathematics, Chemistry or Physics;

5. One optional credit.

B.J. Honours in Journalism and Psychology

First Year

1. Journalism 28.100 and 28.101*;

2. Psychology 49.100;

3. First year language (preferably French);

4. Two approved options.

Second Year

1. Journalism 28.200 and 28.220;

2. Psychology 49.200* and 49.205*;

3. Two of Psychology 49.210*, 49.220*, 49.250*, 49.260*, 49.270*, 49.300*;

4. One approved option.

Third Year

1. Journalism 28.320, 28.321* and 28.351*;

2. Four half courses in Psychology (2 credits) chosen in consultation with members of the Department from Psychology courses in the areas of education, biopsychology, mental health, community social processes, perception, and social policy;

3. One and one-half approved options.

Fourth Year

1. Journalism 28.421 or 28.490;

2. Journalism 28.498;

3. A free optional credit in Psychology;

4. Two approved options.

The B.A. Honours option which is available to students in other combined Journalism programs would not be available here without additional requirements in Psychology.

Graduate Program

The Department of Psychology offers studies leading to the degree of Master of Arts and to the degree of Doctor of Philosophy. For further details consult the Graduate Studies and Research Calendar.

St. Patrick's College Major Programs

The requirements for the Major degree in Psychology at St. Patrick's College are the same as those listed on p. 373. Further details are available under the 'St. Patrick's College' section p. 213.

Courses Offered

Notes:

1. * indicates a half course.
2. Many of the branching courses have limited enrolment. Preregistration is therefore recommended.
3. Many half courses are not open after the first week of registration. Registration in Second term half courses should normally be completed during Fall registration.

Psychology 49.100

Introductory Psychology

The course provides a foundation for understanding human and animal behaviour and prepares the student for advanced study in psychology. Basic content is examined through lectures and readings. Further understanding of specific topics is gained through mini-courses which the student selects from the variety offered. The format of the course allows flexibility in scheduling and provides for self-paced completion of requirements. The workload approximates that of a three hour lecture course.

Day and Evening divisions.

Psychology 49.200*

Introduction to Psychological Research

An introduction to the various research methodologies employed within contemporary psychology. Topics covered may include experimental, observational, case study and archival techniques.

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.201*

Research Methods in Psychology of Learning

A survey of methodological issues in the psychology of learning. The focus will be on either human or animal learning. Independent projects will be assigned.

Prerequisites: Psychology 49.200* and 49.270*.

Open only to Honours students in Psychology. Limited enrolment.

Day division: Lecture three hours, laboratory three hours a week.

Psychology 49.202*

Research Methods in Child Psychology

A survey of methodological issues in child psychology. Independent projects will be assigned.

Prerequisites: Psychology 49.200* and 49.250*.

Open only to Honours students in Psychology. Limited enrolment.

Day division: Laboratory a minimum of six hours a week.

Psychology 49.203*

Research Methods in Social Psychology

A survey of methodological issues within social psychology. Independent projects will be assigned.

Prerequisites: Psychology 49.200* and 49.210*.

Open only to Honours students in Psychology. Limited enrolment.

Day division: Lectures two hours a week, laboratory three hours a week.

Psychology 49.204*

Research Methods in Physiological Psychology

A survey of methodological issues in physiological psychology. Emphasis will be upon the study of experimental paradigms commonly used in physiological psychology.

Prerequisites: Psychology 49.200* and 49.220*. Intended for Honours students in Psychology. (Others must have permission of the instructor.) Limited enrolment.

Day division: Laboratory three hours a week, lecture one hour a week.

Psychology 49.205*

Introduction to Psychological Statistics

Basic properties of descriptive statistics, the logic involved in the traditional hypothesis testing approach and a variety of logical fallacies utilized in generating incorrect conclusions will be examined. In particular students will be trained to recognize distorted results and conclusions unwarranted on the basis of empirical results. In addition, the impact of traditional hypothesis testing upon psychological research will be examined in relation to its limitations and misuses. The emphasis of the course will be upon logic and evaluation rather than techniques per se. (Precludes additional credits for Sociology/Anthropology 56.200 and Sociology 08.307*.)

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.210*

Introduction to Social Psychology

Introduction to contemporary theory and research in social psychology. Areas covered include attitude structure and change, small groups and social learning (Students who wish to substitute Sociology 53.210 for Psychology 49.210* should consult their Psychology Department adviser. Students may not offer both Sociology 53.210 and Psychology 49.210* for credit.)

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.211*

Social Problems

An analysis of one or more social problems from the point of view of social psychology. The problems studied will vary from year to year and might include such topics as invasion of privacy, the challenge of leisure, the quality of urban life and work satisfaction.

Prerequisite: Psychology 49.210*. Limited enrolment.

Not offered 1977-78.

Psychology 49.212*

Attitudes

Theory and research in attitude structure and change, attitude development and the relationships between attitudes and behaviour. Some problems in attitude measurement will be considered.

Prerequisite: Psychology 49.210*. Limited enrolment.
Day division: Lecture/seminar three hours a week.

Psychology 49.213*

Small Groups

A survey of small group theory and research. Areas covered will include leadership and group problem solving.

Prerequisite: Psychology 49.210*. Limited enrolment.
Not offered 1977-78.

Psychology 49.214*

Social Perception

Examination of theory and research related to determinants, consequences and models of a person's perception of people and other socially relevant objects.

Prerequisite: Psychology 49.210*. Limited enrolment.
Day division: Lecture/Seminar three hours a week.

Psychology 49.220*

Biological Foundations of Behaviour

A general introduction to the biological bases of behaviour with particular reference to biological mechanisms associated with sensory and perceptual processes, motivation, emotion, learning and cognition.

Prerequisite: Psychology 49.100.
Day and Evening divisions: Lecture three hours a week.

Psychology 49.221*

Comparative Psychology

An introduction to the development of behavioural capacity from unicellular organisms to man.

Prerequisite: Psychology 49.220*.
Day division: Lecture three hours a week.

Psychology 49.222*

Sensory Psychology

The physiological basis of sensation. Topics will include sensory mechanisms, neuropsychological bases of perception and psychological phenomena encountered by the various senses.

Prerequisite: Psychology 49.220*.
Not offered 1977-78.

Psychology 49.250*

Foundations of Developmental Psychology

Basic principles of developmental psychology with a concentration on theories and methods. Emphasis is on the psychology of childhood and adolescence. (Students may not offer both Psychology 49.250* and Interdisciplinary 04.201 for credit.)

Prerequisite: Psychology 49.100.
Day and Evening divisions: Lecture three hours a week.

Note:

No more than two of the following developmental branching courses may be credited towards the B.A. degree: Psychology 49.251*, 49.252*, 49.253*, 49.254*, 49.257*.

Psychology 49.251*

Psychology of Early Childhood

Development of the child from birth through the preschool years of life; effect of early experience on later behaviour.

Prerequisite: Psychology 49.250*. Limited enrolment.
Day and Evening divisions: Lecture/seminar three hours a week.

Psychology 49.252*

Psychology of Middle Childhood

Development of the child during the elementary school years.

Prerequisite: Psychology 49.250*. Limited enrolment.
Day and Evening divisions: Lecture/seminar three hours a week.

Psychology 49.253*

Psychology of Adolescence

Psychological growth and development from puberty to maturity. Students may not offer both Psychology 49.253* and Interdisciplinary 04.201 for credit.

Prerequisite: Psychology 49.250*. Limited enrolment.
Day division: Lecture/seminar three hours a week.

Psychology 49.254*

Adulthood

An examination of theories on maturity; the problems, training and adjustments required during adulthood. Classroom material will be augmented by projects and special field trips involving adults in the community.

Prerequisite: Psychology 49.250*.
Evening division: Lecture three hours a week.

Psychology 49.255*

Exceptional Children

Selected topics concerning exceptional children such as mentally retarded, brain damaged, physically handicapped, disturbed and gifted children. Psychology 49.255* and 49.256* may not both be offered for credit.

Prerequisite: Psychology 49.250*.
Day and Evening divisions: Lecture three hours a week.

Psychology 49.256*

Behaviour Disorders of Childhood

A review of problems of classification and interpretation. Specific problems covered include early childhood autism, minimal brain dysfunction, learning disabilities and school phobia. Psychology 49.255* and 49.256* may not both be offered for credit.

Prerequisite: Psychology 49.250*.
Not offered 1977-78.

Psychology 49.257*

Old Age

Aging will be examined from the standpoints of physiological, psychological and social change. Problems of retirement will be given special attention. Face-to-face contact will be provided by research and field trips to public and private homes.

Prerequisite: Psychology 49.250* (or 49.100 and at least Third year status).

Day division: Lecture/seminar three hours a week.

Psychology 49.260*

Introduction to the Study of Personality

An introduction to the study of personality. Consideration of problems, methods and theories.

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.261*

Psychoanalytic Theories

Origin and evaluation of psychoanalytic theories with an emphasis on Freud and Jung.

Prerequisite: Psychology 49.250* or 49.260*. Limited enrolment.

Day division: Lecture/seminar three hours a week.

Psychology 49.262*

Self Theories

An evaluation of the assumptive bases and research evidence relating to the positions of Rogers, Maslow and others.

Prerequisite: Psychology 49.260*. Limited enrolment.

Not offered 1977-78.

Psychology 49.264*

Abnormal Psychology

History of the concept of behavioural abnormality. Theory and selected research dealing with the nature and etiology of behavioural abnormality.

Prerequisite: Psychology 49.250* or 49.260* or 49.100 and Third year standing.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.268

The Person and His Behaviour: Theories of Human Conduct and Cognition

The individual and his behaviour are examined from the perspective of several theoretical positions within psychology, namely: psychoanalytic theory, social learning theory, dissonance theory and exchange theory. The course stresses theory and research in the interpretation of human behaviour. Equivalent to Psychology 49.260* and a half credit course (unspecified) in Psychology.

Prerequisite: Psychology 49.100.

Not offered 1977-78.

Psychology 49.270*

Foundations of Learning

Contemporary approaches to the identification of conditions for learning and retention in men and animals,

including a survey of theories, issues, methods and findings.

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.271*

Motivation and Emotion

A discussion of current concepts derived from the experimental study of mechanisms energizing behaviour. Emphasis will be placed upon biological organismic constraints upon behaviour, the interplay between cognitive and biological variables in motivation and emotion and upon recent challenges to "traditional" behaviour theory.

Prerequisite: Psychology 49.270*. Limited enrolment.

Not offered 1977-78.

Psychology 49.300*

Origins of Modern Psychology

The idea of science and its influence on man's conception of himself from Copernicus to Darwin. Scientific and humanistic influences on the emergence of psychology as an independent discipline in the late nineteenth century.

Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture/seminar three hours a week.

Psychology 49.301*

Precursors of Psychology

Ideas that shaped the emergence in the modern era of psychology as an independent discipline, as evidenced in man's speculations on his nature and his relations to the universe. Mind and body in ancient Egypt, Greece and Rome. Arabic influences and the Middle Ages. Elizabethan psychology. The case for a science of man.

Prerequisite: Psychology 49.100.

Day division: Lecture three hours a week.

Psychology 49.302*

Patterns of Twentieth Century Psychology

Systems and theories that have determined the course of experimental psychology since 1890. The collapse of structuralism and the rise of functional, Gestalt, and connectionist systems, and of conditioning. The behaviourist revolution, and the major learning theories of the mid-twentieth century.

Prerequisite: Psychology 49.270*.

Day division: Lecture three hours a week.

Psychology 49.303*

Observation, Description and Explanation in Psychology

Problems of communication, concept formation, an exploration in bio-social science will be discussed. The interplay of facts, methods, models, theories and the human values which these serve will also be explored.

Prerequisite: Psychology 49.100.

Day division: Lecture three hours a week.

Psychology 49.305

Psychological Statistics and Design

A solid foundation in descriptive techniques, probability theory, parameter estimation, hypothesis testing, linear regression, and correlation will be developed. Basic models and their appropriateness in answering different types of research questions will be emphasized. Computational procedures will be given, but major emphasis will be placed upon the decision processes involved in determining which statistical techniques can be applied in relation to different classes of experimental questions. (Successful completion of Psychology 49.305 precludes subsequent enrolment for credit in the following courses: Psychology 49.205*, Sociology/Anthropology 56.200, Sociology 08.307*, and Economics 43.220.) Students may not offer both Psychology 49.305 and Sociology 53.370 for credit. Students may not take Psychology 49.205* and 49.305 concurrently. Prerequisite: Psychology 49.100.

Day and Evening divisions: Lecture three hours a week.

Psychology 49.306*

Systems of Psychology (Honours Seminar)

An examination of the cultural origins, the substance, and the fate of selected psychological systems and theories of the late nineteenth and early twentieth centuries. Since the ability to read a language other than English or French is often necessary for successful historical research, in almost all cases the student will be required to demonstrate the ability to translate in at least one other language. Open only to Third and Fourth year Honours students in Psychology. (Graduate students enrol in this course as 49.500*. Course requirements will be adjusted to the level of the student's qualifications.)

Prerequisites: Psychology 49.300* or 49.301* or permission of the instructor.

Day division: Seminar three hours a week.

Psychology 49.307*

Problems in the History of Psychology (Honours Seminar)

A study of one or more selected topics in the history of man's attempt to understand his own nature. Open only to Third and Fourth year Honours students in Psychology. (Graduate students enrol in this course as 49.501*. Course requirements will be adjusted to the level of the student's qualifications.)

Prerequisite: Psychology 49.306*.

Day division: Seminar three hours a week.

Psychology 49.308

The Analysis of Individual Behaviour

A review of clinical, psychometric and operant methods in the study of individual behaviour. The contributions of the three approaches will be evaluated at the descriptive, predictive and functional levels. Ethical problems and principles will be reviewed. Some field and laboratory work will be required.

Prerequisites: Two full credits in Psychology, including 49.100 and 49.200*. (A course in statistics is recommended.)

Evening division: Lecture/seminar three hours a week.

Psychology 49.315*, 49.316*

Social Psychology II (Honours Seminar), History and Contemporary Theory

A survey in depth of early theoretical and research efforts in experimental social psychology. Attention is directed to the disappearance, reappearance, or continued growth of interest in these areas. Their impact on the various contemporary social psychological theories is considered.

Prerequisite: Psychology 49.210*. Usually open to Third and Fourth year Honours students in Psychology.

Note: The first half course is a prerequisite for the second. Generally the two parts must be taken in the same academic year to meet the Honours requirement.

Day division: Seminar three hours a week.

Psychology 49.321*

Perception

A consideration of data and theory concerning perceptual processes. Such topics as psycho-physical methodology; perception of form and space, and perceptual-learning will be discussed.

Prerequisite: Psychology 49.100.

Day division: Lecture three hours a week.

Psychology 49.325

Physiological Psychology (Honours Seminar)

A detailed consideration of physiological approaches to the study of behaviour.

Prerequisites: Psychology 49.200*, and either Psychology 49.220* or Biology 61.335. Intended for Honours students in at least the Third year.

Day division: Lecture three hours a week.

Psychology 49.327*

Drugs and Behaviour

An introduction to synaptic mechanisms and the neuropharmacological bases of normal and abnormal behaviour will be followed by discussion of the brain and behavioural effects of various classes of psychoactive drugs such as the amphetamines, alcohol, opiates, etc. Emphasis will be placed on the environmental determinants of drug tolerance and dependence.

Prerequisites: Psychology 49.220* and 49.270*. Limited enrolment.

Day division: Lecture/seminar three hours a week.

Psychology 49.330*

Principles of Psychological Testing

What psychological tests are, and how they are developed. Their usefulness and limitations as aids in making decisions about people. The application of testing principles to problems of experimental psychology. The course is designed for those who work with, or plan to work with psychological tests in any setting. Emphasis is on the logic of testing rather than on particular tests.

Prerequisite: Psychology 49.100; training in descriptive statistics is recommended. Limited enrolment.

Day division: Lecture/seminar three hours a week.

Psychology 49.331*

Human Differences

The meaning and worth of the evidence as to human differences derived from psychological tests results. Individual differences in intelligence, achievement, aptitudes, and personality. The problems of interpreting measured differences associated with race, sex, age and class. The course will examine on the basis of psychometric evidence two contrasting hypotheses, that human potentialities are truly equal and that differences are basic and ineradicable.

Prerequisite: Psychology 49.100. Psychology 49.330* is recommended. Limited enrolment.

Day division: Lecture three hours a week.

Psychology 49.340

Personnel Psychology

A review of research and theory within the areas of organizational psychology, psychological testing, and human factors engineering. While the emphasis in the course is on the basic theory and research, efforts are made to relate the material to problems arising within industrial, governmental and educational organizations.

Prerequisite: Psychology 49.100.

Day division: Lecture three hours a week.

Psychology 49.341*

Behaviour Modification in Education

Introduction to basic procedures and methods of operant conditioning as they apply to the classroom setting. This course is primarily designed for practicing teachers, and a classroom project will be required.

Prerequisite: Psychology 49.100.

Day division: Seminar three hours a week.

Psychology 49.342*

Criminal Behaviour

An examination of behavioural approaches to the classification and treatment of offenders. Theories and research relevant to selected patterns of law-breaking and selected offender types will be reviewed. The value of behaviour modification and counselling programs within prisons will be examined.

Prerequisites: Psychology 49.210* or 49.260*.

Day division: Lecture/seminar three hours a week.

Psychology 49.343*

Addiction

A critical review of social-psychological theories and research on the acquisition and maintenance of addictive behaviour. The rationale and outcome of treatment programs for the abuse of alcohol, tobacco, the opiates and the amphetamines.

Prerequisites: Two full credits in Psychology including 49.100.

Evening division: Lecture/seminar three hours a week.

Psychology 49.344*

A study of Play

An introductory review of theories and methods appropriate to the study of play, sport and leisure. Considerable attention is focused in class on "practical" problems such as the design and evaluation of playgrounds and recreational programs for young and old, therapeutic play and violence in sport. Individual and group projects are encouraged on a diversity of topics (e.g. fantasy, gambling, values in sport and society). The learning context is informal, interpersonal and experiential rather than didactic.

Prerequisites: Psychology 49.200*, 49.250*, and either 49.210* or 49.260*. Limited enrolment.

Day division: Lecture/seminar three hours a week.

Psychology 49.345*, 49.346*

Community Psychology (Honours Seminar)

A survey of the major theoretical, methodological and research efforts in community psychology. Major themes will include: the analysis of human-social problems with reference to the social context within which behaviour problems are generated, maintained and labelled as problems; and a commitment to systematic assessment and conceptualization, intervention and research/evaluation. Problems of program administration will be considered with reference to the realities of formal and informal decision-making processes within organizations.

Prerequisite: Usually open to Third and Fourth year Honours students in Psychology.

Note: The first half course is a prerequisite for the second. Generally, the two parts must be taken in the same academic year to meet the Honours requirement.

Day division: Seminar three hours a week.

Psychology 49.355*, 49.356*

Experimental Child Psychology (Honours Seminar)

Seminar on various theories of human development and related research. Students will be required to evaluate and replicate research methods used in selected studies.

Prerequisites: Psychology 49.250* and 49.202* (may be taken concurrently). Usually open to Third and Fourth year Honours students in Psychology.

Note: The first half course is a prerequisite for the second. Generally the two parts must be taken in the same academic year to meet the Honours requirement.

Day division: Seminar three hours a week.

Psychology 49.361*

Psychology of Women

An examination of the literature on the psychology of women. Topics to be considered will include: theories of female development, the biological life cycle, sex differences in ability and personality, sex role learning, and feminine social problems.

Prerequisites: Third year and at least one of Psychology 49.210*, 49.250* or 49.260*. Limited enrolment.

Day and Evening divisions: Lecture/seminar three hours a week.

Psychology 49.362*

Transpersonal Psychology

This course represents the viewpoint that the scientific study of direct experience can provide valuable knowledge concerning the nature of human consciousness. Concern is also directed towards understanding techniques for altering consciousness and to systems of thought which make the experiences meaningful.

Prerequisite: Psychology 49.200* or 49.300* or three full credits in Psychology. Limited enrolment.

Psychology 49.365*

Investigations in Personality (Honours Seminar)

Seminar on various topics in the area of personality and related research.

Prerequisite: Psychology 49.260*. Open to Third and Fourth year Honours students in Psychology.

Day division: Seminar three hours a week.

Psychology 49.375*, 49.376*

Empirical Foundations of Learning (Honours Seminar)

The first section will deal with the specification of empirical variables in animal learning and with their relation to theoretical structures in accounting for their derivation from simple instrumental and classical conditioning. The second section will be concerned with the empirical variables in human learning including the acquisition, transfer and retention of verbal skills, such as short- and long-term memory, serial and paired-associate learning, interference theories.

Prerequisites: Psychology 49.270*. Usually open only to Third and Fourth year Honours students in Psychology.

Note: The first half course is a prerequisite for the second. Generally, the two parts must be taken in the same academic year to meet the Honours requirement.

Day division: Seminar, three hours a week.

Psychology 49.380*, 49.382*, 49.384*, 49.386*

Special Topics in Psychology

The topics of this course, to be offered as demand warrants, will vary from year to year and will be announced well in advance of the period of registration.

In 1977-78 the following will probably be offered as a special topics course: 1. Brain Research and its Social Applications (prerequisite: Psychology 49.220*).

Psychology 49.391*, 49.393*

Practicum in Community Psychology

This course supplements the theoretical and research orientation of the classroom with supervised field work. Emphasis is equally on gaining applied experience and on active and detailed study of community settings such as correctional institutions and centres for treatment and management of the retarded and the elderly. Readings, discussions, and reports will be integrated with the program in the different settings. Research efforts will be encouraged.

Prerequisite: Open to Third and Fourth year students in Psychology with permission.

Note: The first half course is a prerequisite to the second. For placement reasons, pre-registration in this course is strongly recommended.

Schedule to be arranged.

Psychology 49.490*, 49.492*, 49.494*

Independent Study

A reading or research course for selected students who wish to investigate a particular topic of interest. Available to Third and Fourth year students only. Normally a student may not offer more than one full credit of independent study in his total program.

Prerequisite: Permission of the instructor and Honours adviser.

Psychology 49.498

Thesis for Honours in Psychology

Candidates for the Honours degree in Psychology are required to present a thesis conducted under the supervision of a faculty adviser. The project may take the form of an experiment, a case study, a survey, archival research, or such other work as meets with the adviser's approval. The thesis is evaluated by both the adviser and the Psychology 49.498 coordinator.

Note: Summer session registration in Psychology 49.498 is available only to students who were officially registered in and attended meetings of the course during the immediately preceding Winter session.

Prerequisites: Fourth year Honours standing in Psychology; Psychology 49.305; 49.200* and one of 49.201*-4* (or 49.308); completion of an Honours Seminar sequence.

Day division: Seminar and laboratory a minimum of four hours a week.

Courses offered at St. Patrick's College

Most of the following courses will be offered on the campus of St. Patrick's College during the 1977-78 academic year. Sections of the basic "core" courses and "branching" courses will be offered along with courses unique to the St. Patrick's campus. All of these courses are acceptable in the B.A. programs in Psychology on both campuses.

- 49.100 Introduction to Psychology
- 49.200* Introduction to Psychological Research
- 49.205* Introduction to Psychological Statistics
- 49.210* Introduction to Social Psychology
- 49.220* Biological Foundations of Behaviour
- 49.250* Foundations of Developmental Psychology
- 49.253* Psychology of Adolescence
- 49.254* Adulthood
- 49.256* Behaviour Disorders of Childhood
- 49.257* Old Age
- 49.264* Abnormal Behaviour
- 49.308 The Analysis of Individual Behaviour
- 49.342* Criminal Behaviour
- 49.343* Addiction
- 49.345* Community Psychology (Seminar)
- 49.346* Community Psychology (Seminar)
- 49.391* Practicum in Community Psychology
- 49.393* Practicum in Community Psychology

Courses planned for Summer School and Evening Division, 1977-80

In both the Summer session and the Winter session, the Department of Psychology will offer at least the following selection of courses:

1. Psychology 49.100;
2. at least five of the Departmental "core" courses;
3. at least three "non-core" courses.

The Department of Psychology cannot guarantee that courses needed to meet the requirements of the B.A. Honours degree or B.Sc. Honours degree will be available in either the Summer session or the Winter Evening session.

School of Public Administration

For details of programs offered by the School see pp. 323-325.

Courses Offered

Public Administration 50.400

Public Administration Honours Seminar

A research seminar for Fourth year Honours Public Administration students only. The seminar will analyse, through individual and group research projects, a selected group of government programs and policies.
Day division: Three hours a week.

Public Administration 50.498

Honours Essay

Tutorial hours arranged.

Department of Sociology and Anthropology

Officers of Instruction

Chairman

Dennis P. Forcese

Assistant Chairman

Victor F. Valentine

Co-ordinator, St. Patrick's College

Caryll Steffens

Co-ordinator of Graduate Program

Stephen Richer

Co-ordinator of Honours Anthropology Program

Victor F. Valentine

Co-ordinator of Honours Sociology Program

Gertrud Neuwirth

Co-ordinator of Interdisciplinary Major Program

Hyman Burshtyn

Professors

~~Rodney K. Crook~~

Muni Frumhartz

John Harp

Gordon Irving (St. Patrick's College)

~~Zbigniew A. Jordan~~

Bruce A. McFarlane

Gertrud Neuwirth

John Porter

Victor F. Valentine

Francis G. Vallee

Donald Whyte

Visiting Professors

Judah Matras

Thomas Scheff

Associate Professors

Monica Boyd

Hyman Burshtyn

John Cove

Bruce Cox

John de Vries

Dennis P. Forcese

Fred K. Hatt (St. Patrick's College)

Charles Laughlin

Terrance Nosanchuk

Ian Pool

Iain Prattis

Stephen Richer

Derek Smith

Allan D. Steeves

Assistant Professors

Valda Blundell

Jacques Chevalier

Colin Farmer (St. Patrick's College)

Charles C. Gordon

Florence J. Hughes (St. Patrick's College)

Barclay Johnson (St. Patrick's College)

Jared Keil

Joseph Manyoni

Hugh McRoberts

John Myles

Caryll Steffens (St. Patrick's College)

James A. Vantour (St. Patrick's College)

Lecturers

Dennis Olsen

Donald Stewart

Sessional Lecturers

Judy Hatt (St. Patrick's College)

William Outerbridge (St. Patrick's College)

Caroline Ridout-Stewart

Graham Rowley

General Information

The department of Sociology and Anthropology offers four undergraduate programs, three in the main Department, Faculty of Social Sciences, and one at St. Patrick's College.

The former consist of a Major in Sociology-Anthropology and Honours programs in each of Sociology and Anthropology, all of which can be taken either as principal concentrations or in combination with other disciplines. The details of these programs are outlined below. The program at St. Patrick's College is a Major in Sociology, which can also be combined with another discipline. It has its own set of core requirements and places particular emphasis on certain applied and policy-oriented fields. The list of courses which constitute the program is found on p. 395 of the Calendar. A more fully detailed description of the program and of individual courses appears on pp. 240-241.

The several types of courses offered by the Department are indicated by the following numerical prefixes:

53 Sociology

54 Anthropology

56 Sociology-Anthropology

08 Sociology (St. Patrick's College)

Providing they meet the requirements of the particular program for which they are registered, students may select their courses from any or all of these.

Major Programs

Students in the Major program in the main Department are expected to attain a grade of C- or better in the introductory course. Their program will normally consist of at least six courses in the Major field, including Sociology-Anthropology 56.100; 56.200; one of 56.305, 53.306 or 54.310; and at least one additional course at

the Third year level. Final year students with the requisite standing may be given permission to take a course at the Fourth year level. It is also expected that some work will be taken in related disciplines, the most important of which are: Economics, Geography, History, Political Science and Psychology. The whole course program is to be worked out in consultation with the Co-ordinator of Majors and the student's departmental adviser.

A student may not count more than nine full-course credits or their equivalent in Sociology and/or Anthropology toward a Major B.A. degree.

Combined Major Programs

A Major program combining Sociology-Anthropology with another discipline requires a minimum of four Sociology-Anthropology courses including 56.100 and either 56.200 or one of 56.305, 53.306 or 54.310. At least one of the remaining courses taken within the Department must be at the Third year level. The program should be worked out in cooperation with the two Departments and may well include other requirements additional to those above.

Honours Programs

General

Honours programs may be entered from the Honours First year in the Social Sciences (see p. 316) or by transfer from the Major course if the appropriate standing has been attained. Students taking Honours in Sociology or Anthropology are expected to meet the general University regulations governing the degree and to fulfill certain additional requirements depending on the program selected. The Practicum or the Essay will be considered as a course in determining a student's final standing. The following programs are available.

Sociology

The entire selection of courses is to be worked out in close consultation with the Co-ordinator of Honours (Sociology) or members of the Honours Program Committee (Sociology). The requirements consist of:

1. Nine full-course credits, or their equivalent, in Sociology and/or Anthropology, including:
 - (a) The introductory course Sociology-Anthropology 56.100;
 - (b) Sociology-Anthropology 56.200 and Sociology 53.370;
 - (c) Sociology-Anthropology 56.305 and Sociology 53.306 (one of these should be taken in the Second year);
 - (d) Two half-year seminars or one full-year seminar at the 400 or 500 level;
 - (e) Sociology 53.495 (Honours Practicum) or 53.498 (Honours Essay);
 - (f) Two additional full courses, or their equivalent, within the Department.

2. A Minor consisting of three full courses in one of the following: Economics, Geography, History, Philosophy, Political Science or Psychology. Alternative Minors will also be considered.

3. It is recommended that students take Mathematics 69.107* and 69.127*, preferably during their First year or as soon as possible thereafter.

4. A maximum of twelve full credits in Sociology and Anthropology may be counted toward the degree of B.A. with Honours in Sociology.

5. A total of twenty full-course credits or their equivalent is required.

Anthropology

The entire selection of courses is to be worked out in close consultation with the Co-ordinator of Honours (Anthropology) or members of the Honours Program Committee (Anthropology). The requirements consist of:

1. Nine full-course credits, or their equivalent, in Sociology and/or Anthropology, including:

- (a) The introductory course Sociology-Anthropology 56.100;
- (b) Sociology-Anthropology 56.200, Anthropology 54.310, 54.410 and 54.495;
- (c) Two additional half-year seminars or one full-year seminar at the 400 or 500 level;
- (d) Three additional full courses, or their equivalent, within the Department.

2. A maximum of twelve full credits in Sociology and Anthropology may be counted toward the degree of B.A. with Honours in Anthropology.

3. A total of twenty full-course credits or their equivalent is required.

Combined Honours in Sociology

Students intending to enter an Honours Program combining Sociology with another discipline should take Sociology-Anthropology 56.100 and the introductory course in the other discipline in their First year. A minimum of seven courses in Sociology and/or Anthropology is required, but no more than nine may be counted toward the degree. The entire selection of courses is to be worked out in close consultation with the Co-ordinator of Honours (Sociology) or members of the Honours Program Committee (Sociology), as well as with the equivalent person(s) in the other discipline.

Combined Honours with a considerable number of disciplines is possible and will be worked out upon request. The following programs are examples:

Combined Honours in Sociology and Political Science

Required courses in Sociology and/or Anthropology include:

1. Sociology-Anthropology 56.100;
2. Sociology-Anthropology 56.200, followed by Political Science 47.470 or Political Science 47.270 followed by Sociology 53.370;
3. Sociology-Anthropology 56.305 or Sociology 53.306 (if the Honours Essay is written in Sociology, 53.306 is recommended);
4. If the Honours Essay is written in Sociology: Sociology 53.495 or 53.498, and three additional full credits in Sociology, one of which must be taken at the 400 or 500 level. If the Honours Essay is written in Political Science: four additional full credits in Sociology, one of which must be taken at the 400 or 500 level.

Note:

Students should also consult the statement of the Department of Political Science.

Combined Honours in Sociology and Psychology

Required courses in Sociology include:

1. Sociology-Anthropology 56.100;
2. Sociology-Anthropology 56.200;
3. Sociology-Anthropology 56.305 or Sociology 53.306 (if the Honours Essay is written in Sociology, 53.306 is recommended);
4. If the Honours Essay is written in Sociology: Sociology 53.370; 53.495 or 53.498; and two additional courses in Sociology, one of which must be taken at the 400 or 500 level. If the Honours Essay is written in Psychology: Psychology 49.305 and four additional courses in Sociology, one of which must be taken at the 400 or 500 level.

Note:

Students should also consult the statement of the Department of Psychology.

Combined Honours in Anthropology

Students intending to enter an Honours Program combining Anthropology with another discipline should take Sociology-Anthropology 56.100 and the introductory course in the other discipline in their First year. A minimum of six courses in Anthropology and/or Sociology is required. The entire selection of courses is to be worked out in close consultation with the Co-ordinator of Honours (Anthropology) or members of the Honours Program Committee (Anthropology) as well as the equivalent person(s) in the other discipline.

Combined Honours with a considerable number of other disciplines is possible and will be worked out upon request.

Ordinarily, the requirements will include:

1. Six full-course credits in Anthropology and/or Sociology, including:
 - (a) Sociology-Anthropology 56.100;
 - (b) Sociology-Anthropology 56.200;
 - (c) Anthropology 54.310.
2. Where the Honours Practicum is taken in Anthropology, Anthropology 54.410 and 54.495 plus one additional full course, or equivalent, at the 400 or 500 level are required.
3. Where the Honours Essay is written in another discipline, three additional full courses, or equivalent, must be taken in Sociology and Anthropology, one of them at the 400 or 500 level.

Graduate Program

The Department offers studies leading to the following graduate degrees: M.A. in Sociology, M.A. in Social Anthropology and Ph.D. in Sociology. For further details consult the Graduate Studies and Research Calendar. Final-year Honours students may take one or more graduate seminars with the permission of the instructor. The courses that are especially recommended are listed at the end of this section of the Calendar.

Prerequisite

The normal prerequisite for courses taken beyond the 100 level is Sociology-Anthropology 56.100. An introductory course in Sociology or Anthropology taken at Carleton University prior to 1972-73, or at another university, will ordinarily satisfy the prerequisite requirement. Other students may be admitted with permission of the instructor.

Course-Related Tutorials

Students within the Department should consider including among their courses one or more course-related tutorials (Sociology-Anthropology 56.291*, 56.292*, 56.391* and 56.392*). These are intended to permit students (1) to work on their own and in close contact with an instructor and/or a small set of peers and (2) to work on questions or at a level beyond the central concerns of formally constituted courses.

Such tutorials may be taken for half-course credit either concurrently with any full course (except Sociology-Anthropology 56.100) in which the student is enrolled or in the term immediately following a course, full or half, which the student has completed. The tutorial arrangements are generally flexible and are worked out

between the student and the tutor. If a number of students choose to do so, the arrangements may include small seminars or workshops either with the instructor or among the students themselves.

Permission to take a tutorial of this type is contingent upon the availability of the instructor in the course or of another instructor with experience and interest in the field. It also requires a detailed proposal by the student and approval by the instructor, outlining the project or course of study to be undertaken and its bearing upon the main course.

Further information is available from course instructors.

Courses Offered

Sociology-Anthropology 56.100

Principles of Comparative Social Structure

An introduction to the comparative study of human society from the twin perspectives of sociology and social anthropology. The principal focus will be upon problems of societal continuity and change in highly complex as compared with relatively simple societies. The several sections of the course may be expected to reflect different emphases and approaches. Section outlines and reading lists will be available prior to registration.

Day and Evening divisions: Lectures and discussion three hours a week.

D. Forcese, M. Frumhartz, C. Gordon, F.K. Hatt, J. Keil, D. Olsen, I. Prattis, C. Ridout-Stewart.

Summer 1977, Day division: Lectures and discussion ten hours a week; Evening division: Lectures and discussion five hours a week.

Sociology-Anthropology 56.200

Research Methods in Anthropology and Sociology

An examination of the logic, principles and methods employed in anthropological and sociological research, and of problems in the ethics of research. Attention is paid to alternative approaches and strategies and to the uses of observation, ethnography, experimental design, questionnaires and interviews, sampling, surveys, secondary analysis of quantitative data, and measurement. Laboratory work and field exercises are emphasized.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day and Evening divisions: Lectures and workshop three hours a week.

V. Blundell, B. Johnson, C. Laughlin, T. Nosanchuk, I. Pool, D. Stewart.

Summer 1977, Day division: Lectures and workshop fifteen hours a week.

Sociology-Anthropology 56.205

Qualitative Research

This course will entail the naturalistic study of small-scale social settings in the context of everyday

life. Evaluation of appropriate concepts and styles of qualitative research will serve as a foundation for the major course assignment: an ethnographic study of a local "small life world".

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Not offered 1977-78.

Anthropology 54.206*

Hunting and Gathering Societies

Hunting and gathering societies will be examined as a consequence of a particular mode of adaptation. This mode will be analyzed in terms of its ecological and evolutionary significance. Emphasis will be placed on the use of ethnographic materials from different societies.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

V. Blundell

Summer 1977, Evening division: Lectures and discussion five hours a week.

Anthropology 54.207*

Horticultural Societies

Horticulture will be examined as a mode of adaptation having consequences for human society. The specific implications will be viewed through an ecological and evolutionary perspective. Ethnographic material from different cultures will be used to illustrate the relations between horticulture and social organization.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division, Second term: Lectures and discussion three hours a week.

J. Keil

Summer 1977, Evening division: Lectures and discussion five hours a week.

Anthropology 54.208*

Pastoral Societies

An examination of pastoralism as a form of human adaptation. The evolutionary and ecological implications of various types of animal husbandry will be examined. Emphasis will be placed on the use of ethnographic materials.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

J. Cove

Sociology 53.210

Social Psychology

The study of the relationship between the individual and the social system. Emphasis is on integrating individual and social approaches. How does a group influence psychological processes (attitudes, cognitions, motivations, etc.)? How does an individual influence a group? Group processes such as socialization, symbolic

interaction, coercion, conformity, leadership, cohesion, etc., will be studied.

Prerequisite: Sociology-Anthropology 56.100 or equivalent, introductory Psychology or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

T. Nosanchuk

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology-Anthropology 56.220

Canadian Society

The course focuses on the study of Canadian society as an ongoing social system. Alternative theoretical perspectives are developed and examined for the interpretation they provide of recurrent social issues. Special attention is given to persistence and change in regional, ethnic, class and sex-role differences.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

J. Harp

Summer 1977, Day division: Lectures and discussion ten hours a week.

Anthropology 54.225

Prehistoric Anthropology, Cultural and Biological Evolution of Man

An examination, from an evolutionary point of view, of the physical anthropology and archaeology of early man, the origins of man, the development of technology and of complex institutions, and the nature of racial differences.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures two hours a week and workshop one hour a week.

V. Blundell

Summer 1977, Day division: Lectures and discussion ten hours a week.

Anthropology 54.230

Social Systems of Non-Western Societies

A study of social anthropology with an emphasis on cross-cultural comparisons of a sample of world societies in terms of kinship, political, economic, religious and symbolic systems.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

B. Cox

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology-Anthropology 56.235

Ethnic Group Relations

An anthropological and sociological study of minority groups and of ethnic and "race" relations in multi-

cultural societies. The course will focus on intergroup processes within a comparative framework.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

F.K. Hatt

Summer 1977, Day division: Lectures and discussion ten hours a week.

Sociology-Anthropology 56.241

Kinship, Marriage and the Family

The course will entail a cross-cultural analysis of kinship and kin groups, an examination of the historical development of the family in western society and a general survey of contemporary family life and its relationship to the total society.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

G. Irving

Summer 1977, Day division: Lectures and discussion ten hours a week.

Sociology-Anthropology 56.243

Religion and Society

A broad survey of religious institutions, with comparative and historical emphases. Examination will be made of the major social, cultural, and psychological theories of religion, as well as of the methodological problems associated with the subject matter. Attention will also be placed on a range of topics such as totemism, social change, utopian communities, secularization, and the relationship of religion to other social institutions and processes.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

G. Irving

Sociology 53.245

The Sociology of Work: Occupations and Professions

A study of the sociological aspects of work, with particular emphasis on the historical development and contemporary organization of occupations and professions, career patterns and recruitment, and manpower problems in developed and developing countries.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

B. McFarlane

Summer 1977, Day division: Lectures and discussion ten hours a week.

Sociology 53.246*

Industrial Sociology

An inquiry into the development, structure and prospects of industrial society and post-industrial society, including the relation of industrial institutions to the rest of the society, and the internal organization of industrial institutions, including problems of management, labour and union relations.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

C. Gordon

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology 53.251*

Introduction to Population Studies

An introduction to the basic principles of demography. Past and present population growth, and the determinants of population growth, are examined. Interrelations among demographic, social, cultural and economic factors are investigated. Where possible, Canadian demographic material is discussed.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First and Second terms: Lectures and discussion three hours a week.

M. Boyd

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology-Anthropology 56.253*

Introduction to Human Ecology

The course will focus on interrelationships among population, organization, environment and technology, and on the relationship between man and the natural environment from the perspective of resource use, management and policy. (When this course is given in more than one section, the sections are likely to differ in the disciplinary approach that is emphasized.)

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

I. Pool

Sociology 53.254*

Urban Sociology

An examination of issues related to man and the urban environment, including the historical process of urbanization, the rural-urban transition, and the diffusion of urban values and life styles. Some attention will be paid to contemporary urban problems, such as urban renewal, pollution and the pressures of the urban environment on social institutions.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term and Evening division, Second term: Lectures and discussion three hours a week.

A. Steeves

Sociology 53.255*

Sociology of Deviance

An analysis of the relation of deviant behaviour to the functioning of social systems: conditions and types of deviance from the institutional order, the evasion of rules, the social roles of deviants, the structure of control, punishment and cure.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division, First term and Day division, Second term: Lectures and discussion three hours a week.

J. Vantour, C. Farmer

Sociology 53.256*

Police in Society

An examination of the organization and activities of the police in industrialized societies. Particular attention will be devoted to Canadian information, and the themes of social control, police discretion, and the relations of police to a democratic society.

Prerequisite: Sociology-Anthropology 56.100. Closed to students who were enrolled in Sociology-Anthropology 56.286* in 1975 or 1976.

Day division, Second term: Lectures and discussion three hours a week.

D. Forcese

Sociology-Anthropology 56.285*

Selected Topics

Topic for 1977-78: Sociology of Family Formation and Fertility Regulation. Reproduction is one of the basic family functions which has undergone the greatest change in Western and non-Western societies in recent times. This course will follow the process of reproduction from menarche through marriage and childbearing using changes in the life-cycle as a framework. The timing and spacing of marriage and childbearing will be interrelated with differential patterns of fertility regulation and with external socio-economic factors such as labour force participation and education, and with internal structures such as power within the family. The Canadian family will be dealt with in a comparative context.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

I. Pool

Sociology-Anthropology 56.286*

Selected Topics

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Not offered 1977-78.

Sociology-Anthropology 56.291* and 56.292*

Course-Related Tutorials

See explanatory note on p. 386.

Anthropology 54.301*

Phonetics

Offered as Linguistics 29.301*

Anthropology 54.302*

Phonology

Offered as Linguistics 29.302*

Anthropology 54.303*

Language Analysis

Offered as Linguistics 29.303*

Anthropology 54.304*

Grammar

Offered as Linguistics 29.304*

Sociology-Anthropology 56.305

The Development of Sociological and Anthropological Thought

The development of sociological and anthropological thought since the end of the eighteenth century. Various theoretical approaches will be placed within their historical, social and intellectual contexts. The writings of key figures such as Comte, Spencer, Marx, Durkheim, Weber, Malinowski and Radcliffe-Brown will be examined and analysed as illustrations of the development of theoretical approaches in both disciplines.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

D. Smith

Summer 1977, Day division: Lectures and discussion ten hours a week.

Sociology 53.306

Contemporary Theoretical Sociology

Consideration is given to the major contemporary theories, such as structural functionalism, social behaviourism, symbolic interactionism, conflict theory and the theory of social action. Apart from the principal substantive issues raised by each of these theories, certain methodological problems associated with the formulation of theories and the relations of theory to research will be discussed.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

D. Whyte

Summer 1977, Evening division: Lectures and discussion five hours a week.

Anthropology 54.310

Theory and Methodology in Anthropology

A consideration of the nature of anthropological theory and of explanation in the anthropological context. Some attention will be devoted to previous formulations relevant to contemporary anthropology, but the emphasis will be on the contemporary formulation of culturology, ecological determinism, evolutionism and structural-functionalism. Special attention will be given to the interdependence of theory and methods of research.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

J. Chevalier

Sociology 53.312*

Science and Society

An historical and comparative approach to the analysis of science and society. Such topics as the institutionalization and professionalization of science; the organizational context of scientific work; relations between science and other institutions; the norms of science, and the role and career of the scientist will be considered.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Not offered 1977-78.

Sociology 53.315

Sociology of Education

An examination of educational institutions: their interplay with one another and with other social institutions; the structure of educational opportunity; the school and university seen as organizations; individual and social effects of education; the sociology of learning. The approach will be generally comparative and will include a consideration of contemporary critiques of the educational system. (If the course is given in more than one section, the sections will very probably differ in their emphasis, whether in terms of the level of the educational system or in relation to the selection of questions and problems.)

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day and Evening divisions: Lectures and discussion three hours a week.

S. Richer, J. Harp

Summer 1977, Day division: Ten hours a week.

Anthropology 54.318*

The Prehistory of New World Indians and Eskimos

An examination of the prehistory of the New World, with particular emphasis upon North America. Topics to be covered include the peopling of the New World, the origins of agriculture and civilization in this area, and the regional culture histories of Indian and Eskimo societies. Special attention will be given to the prehistoric roots of contemporary Indian and Eskimo societies.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division, First term: Lectures and discussion three hours a week.

D. Stewart

Anthropology 54.319*

The Ethnography of New World Indians and Eskimos

An examination of traditional New World Indian and Eskimo societies focusing upon their varying social and cultural adaptations. The course will include a survey of cultural and linguistic areas of North America. Consider-

ation will be given to social, economic and political organization, as well as to the role of religion, mythology and art. Particular attention will be paid to the native peoples of Canada.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division, Second term: Lectures and discussion three hours a week.

D. Smith

Sociology-Anthropology 56.320

French Canadian Society

An analysis of the French Canadian way of life, including politics, religion, social structure, cultural values and literature. Consideration is given both to historical development and to the contemporary situation.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

J. Chevalier

Anthropology 54.330

Developing Nations of Inter-tropical Africa

Offered in the Department of Geography as Geography 45.330.

Anthropology 54.331*

Kinship Systems

The analysis and understanding of kinship systems. The interconnections between kinship and other societal systems.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

J. Chevalier

Anthropology 54.332*

Political Systems

An examination of the anthropological dimensions of power, authority and political behaviour. The development of political institutions. Political functions in band, tribal and state societies.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

B. Cox

Anthropology 54.333*

Economic Systems

The anthropological analysis of the relation of economic organization, ecology and technology to the rest of society. The various modes of production and distribution of goods in primitive and modern societies. The consequences of economic change.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

I. Prattis

Summer 1977, Evening division: Lectures and discussion five hours a week.

Anthropology 54.334*

Symbolic Systems

The anthropological analysis of the particular symbolic systems that are related to religion and magic. A section of the course will be devoted to the structural analysis of myths.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

D. Smith

Summer 1977, Evening division: Lectures and discussion five hours a week.

Anthropology 54.335*

Prehistoric Settlement Patterns

Archeological analyses of cultural choices regulating the utilization of space. The relation of settlement patterns to social, economic, and other cultural factors will be considered.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

D. Stewart

Sociology 53.338 (53.335)

Social Response to the Built Environment

An examination from a social perspective of the interaction between humans and the buildings, towns and cities they construct. Emphasis will be placed upon the functional, cognitive and expressive aspects of these interactions, at various levels of social organization and in various settings. Particular consideration will be given to the institution, and to the nature of design as a social action.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

C. Gordon

Sociology 53.345*

Stratification and Mobility

An examination of the principal theoretical and empirical questions in the study of social class and social mobility in complex societies. The bases and forms of inequality are examined with the aid of data from Canada, England, the United States, the Soviet Union, China, Japan and a number of other societies.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

H. McRoberts

Sociology 53.347*

Power

The principal concern of the course is the nature of power in human groups — its sources, forms and processes. Particular attention is paid to community and national elites and power structures.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

D. Olsen

Sociology 53.350*

Political Behaviour

An examination of sociological contributions to the study of political behaviour, and of the relations between politics and the social structure, both in Canada and in other societies. Emphasis is placed upon political socialization, the class basis of politics, conflict, mass movements and change.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division, Second term: Lectures and discussion three hours a week.

D. Olsen

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology 53.351*

Methods of Population Analysis

An introduction to demographic techniques. Problems in the collection and analysis of population data, such as population censuses and vital registration. Emphasis will be placed upon the application of "demographic" methods (e.g., cohort analysis) to other areas of sociological investigation.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

I. Pool

Sociology 53.355

Complex Organizations

A study of the formal and informal structure of modern, large-scale organizations, such as government, voluntary service groups and industry. Special attention will be given to problems of control, decision-making and communications. Attention will also be given to an examination of factors responsible for the growth or decline in historic bureaucratic systems and to the influence of technology and general systems theory on modern organizational forms.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

J. Myles

Summer 1977, Evening division: Lectures and discussion five hours a week.

Sociology-Anthropology 56.358

Conflict and Society

A comparative study of the strategies used by a number of western and non-western societies to resolve or promote conflict. Examination will be made of the social conditions that generate conflict; and the ideas developed by different cultural groups to explain war, rebellion and revolution. Students will be encouraged to do original research. (Sociology-Anthropology 56.200 or its equivalent in other departments is recommended as a suitable preparation for this course.)

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Not offered 1977-78.

Sociology-Anthropology 56.360

Social Change and Modernization

Comparative analysis of social change with particular emphasis on the processes associated with industrialization and their impact on social structure. Problems of internal and external obstacles to modernization; the relations of different social groups to economic development.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division: Lectures and discussion three hours a week.

A. Steeves

Anthropology 54.362

Contemporary Societies of Africa

Anthropological perspectives in the study of contemporary African societies. Special attention will be paid to processes of change in traditional life styles through migration, urbanization and westernization. The main theme is modernization.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and discussion three hours a week.

C. Laughlin

Summer 1977, Day division: Lectures and discussion ten hours a week.

Sociology 53.370

Research Methods and Statistics

Study of descriptive and inferential statistical techniques used in the social sciences. Special attention will be directed to these analytical techniques in relation to data collection procedures in Sociology.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Evening division: Lectures and workshop four hours a week.

H. McRoberts

Anthropology 54.371*

Anthropological Linguistics

A review of theory and methods of anthropological linguistics. Emphasis will be on the interdependence between language and culture. The study is undertaken on a comparative basis and includes both preliterate and literate groups.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, First term: Lectures and discussion three hours a week.

Anthropology 54.372*

Psychological Anthropology

A cross-cultural study of certain psychological processes such as cognition, learning and perception; an examination of the interdependence between culture and personality.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Day division, Second term: Lectures and discussion three hours a week.

D. Stewart

Anthropology 54.373*

Urban Anthropology

This seminar will enable students to pursue their interests in contemporary urban studies from the viewpoint of urban anthropology. Students will do individual research projects on an urban group of their choice and the different findings will then be compared and contrasted with contemporary urban anthropological theory and ethnography. Original participant observation of urban groups is encouraged where possible.

Prerequisite: Sociology-Anthropology 56.100, or equivalent, or permission of the instructor.

Not offered 1977-78.

Sociology-Anthropology 56.391* and 56.392*

Course-Related Tutorials

See explanatory note on p. 386.

Sociology 53.400

Sociological Analysis

An advanced examination of approaches and problems in the comparative analysis of social structure and social process. The course is specifically intended for senior students with little or no background in sociology.

Prerequisite: Third- or Fourth-year Honours standing or Qualifying year graduate standing or permission of the instructor. Majors and Honours students and Combined Majors and Honours students within the Department may not take this course for credit toward their degree.

Day division, Seminar two hours a week.

C. Steffens

Anthropology 54.410

The Ethnographic Enterprise

An examination of the premises underlying particular cases of empirical work in Anthropology. The value of

various anthropological paradigms for the solution of standard ethnographic problems.

Prerequisite: Final-year Honours standing, or permission of the instructor.

Day division: Seminar two hours a week.

J. Keil

Anthropology 54.430

Culture and Communication

A study of animal and human communication (verbal and non-verbal) systems; the relation of these to other social and cultural phenomena. Contrasts between oral and written traditions, between myth in non-literate societies and mass media in urban societies, and the content of contemporary "popular culture" are examined.

Prerequisite: Final-year Honours standing, or permission of the instructor.

Day division: Seminar two hours a week.

V. Valentine

Sociology 53.443

Sociology as Social Intervention

An examination of the uses of Sociology in social criticism and social policy. Illustrative cases will be drawn from the broader ranges of sociological thought, certain areas of the substantive literature and the work of individual sociologists. In the examination of these materials, principal consideration will be given to their actual and potential role in criticism and policy formation, as well as to the criteria by which this type of contribution may be assessed.

Prerequisite: Final-year Honours standing, or permission of the instructor.

Day division: Seminar two hours a week.

M. Frumhartz

Sociology 53.445*

Modern National Societies as Total Systems

An examination of modern societies as total systems with particular reference to their more significant modes of variation. Consideration is given both to the available theoretical models and to selected empirical cases.

Prerequisite: Final-year Honours standing, or permission of the instructor.

Not offered 1977-78.

Sociology 53.446*

Selected Problems in Stratification and Mobility

An examination of selected theoretical and empirical problems in the study of social stratification and mobility. Topics discussed may include: recent developments in the theory and methodology of social stratification and mobility, cross-cultural comparisons, and changes over time in social and ethnic stratification in selected societies. Topic for 1977-78: Recent developments in the theory and methodology of stratification and mobility.

Prerequisites: Fourth-year Honours or Qualifying year M.A. standing, Anthropology 54.345* or permission of the instructor.

Day division, First term: Seminar two hours a week.
J. Porter

Sociology 53.450*

Advanced Research Methodology

An advanced study of specific methodological or statistical problems in social research. Students are expected to participate in a seminar project in which the topic will vary from year to year. Among the topics which may be included are: secondary data analysis, elite interviewing, participant and other modes of observation, construction of attitude scales and multivariate analysis.

Prerequisite: Sociology-Anthropology 56.200, or Sociology 53.370, or permission of the instructor.

Not offered 1977-78.

Sociology 53.451*

Substantive Demography

An application of demographic models to the study of the interrelations of demographic and other phenomena. Students are expected to apply demographic techniques and conceptual frameworks to the investigation of a substantive problem.

Prerequisite: Sociology 53.351*, or permission of the instructor.

Day division, Second term: Seminar two hours a week.

M. Boyd

Sociology 53.456*

Selected Problems in Urban Studies

An intensive examination of one or more problems in the general area of urban studies, such as the role of urban planners, grass-roots movements in urban communities, ecological and other environmental phenomena associated with urban growth. Topic for 1977-78: The Sociology of the National Capital Region. A theoretical and empirical practicum on the social structure and dynamics of the Ottawa-Hull regional community. The analysis will focus upon the relationship between central city institutions and the development of suburban communities in the region.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, Second term: Seminar two hours a week.

A. Steeves

Sociology 53.461*

Selected Problems in the Study of Deviance

A critical examination of current theory and research on some specific type of deviance, such as crime, sexual deviance, the use of alcohol, non-medical drug usage, mental illness, political corruption, etc. Topic for 1977-78: Sociology of emotions. The processes of repression, distancing and catharsis, and their social implications: the social psychology of ritual, games and mass entertainment.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, Second term: Seminar two hours a week.

T. Scheff

Sociology-Anthropology 56.465*

Selected Problems in the Study of Ethnic and Race Relations

An intensive examination of certain aspects of ethnic and race relations and conflict as they relate to the concept of plural society, to the revival of ethnic and racial prejudice against recent immigrants to post-industrial societies and to the emergence of ethnic consciousness and nationalism.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, First term: Seminar two hours a week.

F.K. Hatt

Anthropology 54.470*

Selected Problems in the Study of New World Indians and Eskimos

An in-depth examination of several Indian and Eskimo societies. Attention will be given to both change and persistence in social and cultural patterns within the historical period, as well as to the contemporary conditions under which Indians and Eskimos live. Emphasis will be placed on the native peoples of Canada and other areas of the Americas.

Prerequisite: Final-year Honours standing or permission of the instructor.

Not offered 1977-78.

Anthropology 54.475*

Contemporary Problems in Anthropology

Topic for 1977-78: The North, Canada. The course is designed to consider the nature of development in the Canadian north, and the resulting social, economic and political changes, with particular reference to the effect of these changes on the native people. The main area of study will be that part of Canada lying north of the tree line, but some of the more northern forested areas will also be covered. The emphasis will be on the contemporary life of the Canadian Eskimos.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, First term: Seminar two hours.

G. Rowley

Anthropology 54.476*

Contemporary Problems in Anthropology

Topic for 1977-78: The North, The Circumpolar Region. The course is designed to consider the nature of development in the northern circumpolar regions, and the resulting social, economic, and political changes, with particular reference to the effect of these changes on the native people. The emphasis in this course is comparative. The area of study will be that part of the world lying north of the Arctic Circle, but it will extend somewhat south of this in Canada, Greenland and eastern Siberia.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, Second term: Seminar two hours.

G. Rowley

Sociology 53.485*

Contemporary Problems in Sociology

Topic for 1977-78: Women and Contemporary Society. The course examines the social roles of women utilizing a variety of sociological frameworks. Among the topics to be covered are: sex roles, socialization, family functions, education, political participation, legal rights and social stratification of women.

Prerequisite: Final-year Honours standing or permission of the instructor.

Evening division, First term: Seminar two hours a week.

M. Boyd

Sociology 53.486*

Contemporary Problems in Sociology

Topic for 1977-78: Organizational Sociology. The seminar will focus specifically on recent theoretical and empirical analyses of the multinational corporation.

Prerequisite: Final-year Honours standing or permission of the instructor.

Day division, Second term: Seminar two hours a week.

J. Myles

Sociology 53.490, 53.491* and 53.492*

Anthropology 54.490, 54.491* and 54.492*

Tutorial in Sociology or Anthropology

Courses designed to permit a student to pursue his or her interests in a selected area of sociology or anthropology. The student prepares papers as the basis for discussion with the tutor.

Prerequisite: Final-year Honours standing and permission of the Chairman.

Tutorial hours arranged.

Sociology 53.495, Anthropology 54.495

Honours Practicum

At the end of their final year Honours candidates are required to present a major research essay. For Honours students in Anthropology, and for those Honours students in Sociology who choose this option, this requirement is met through the Practicum. Students present their essay proposals for discussion and criticism to fellow students and faculty and report periodically upon the paper's progress. Common problems of conceptualization, research design, analysis and interpretation are taken up for consideration.

Prerequisite: Final-year Honours standing.

G. Neuwirth, V. Valentine

Sociology 53.498

Honours Essay

At the end of their final year Honours candidates are required to present a major research essay. For Honours students in Sociology the Honours Essay, carried out under a faculty supervisor, is one way of meeting this requirement. Early in the year and in consultation with the Co-ordinator of Honours (Sociology), the student selects or is assigned a supervisor. The student is orally examined upon the Essay after its submission.

Prerequisite: Final-year Honours standing.

Hours arranged.

Graduate Courses

Final-year Honours students are encouraged to take one or more graduate seminars which are available to them with the permission of the instructor. In particular, their attention is drawn to the following:

- 54.504 Ecological Anthropology
- 53.509* The Philosophy of Social Science I
- 54.516* North American Ethnography
- 54.517* Sub-Saharan African Ethnography
- 53.520* Comparative Social Systems
- 53.524* Sociology of Science and Technology
- 53.526* Sociology of Occupations and Professions
- 53.527* Sociology of Formal Organization
- 53.530* Social Institutions I
- 53.531* Social Institutions II: Education
- 53.540* Political Sociology
- 53.545* Power and Stratification
- 53.550* National Unity in Multi-ethnic Societies

Courses Offered at St. Patrick's College

Sociology

- 08.100 Principles of Sociology
- 08.110 Principles of Anthropology
- 08.206 Principles of Sociological Theory and Methodology
- 08.255 Sociology of Deviance
- 08.270 Criminology
- 08.306* The Sociological Tradition
- 08.307* Methods of Social Research
- 08.373* Correctional Policy
- 08.375* Medical Sociology
- 08.377* Sociology of Welfare Institutions
- 08.388* Selected Topics in Sociology
- 08.390* Independent Studies in Sociology

Sections of certain main department courses will also be offered at St. Patrick's College on a rotating basis.

Courses Planned for Summer School and Evening Division

Summer 1978 (tentative)

Day

- 56.100, 53.210, 54.230, 08.270, 53.306, 53.315, 56.320, 54.331*, 54.332*, 53.338, 56.360, 54.362, 53.585*

Evening:

- 56.100, 56.200, 54.225, 56.235, 56.241, 56.243, 53.245, 56.253*, 53.254*, 53.255*, 53.256*, 54.310, 54.319*

The introductory course (Sociology-Anthropology 56.100) will be given every summer in both divisions.

Every summer one of the required theory courses will be given, alternating between Day and Evening divisions. Other offerings will depend upon departmental capabilities and student interest and demand. A variety of types and levels of courses will be offered each year.

Fall-Winter Session Evening Division

The introductory course (Sociology-Anthropology 56.100) is offered every year in one or more sections.

One of the required methods courses (56.200 and 53.370) and one of the required theory courses (53.300, 56.305, 53.306 and 54.310) will be offered in every Evening session. The specific courses will rotate year by year, so that each of the methods courses will have been offered in the Evening over a two-year period and each of the theory courses over a three-year period.

A number of other courses will be offered with some frequency as well, depending upon departmental capabilities and student interest and demand. In any given year an attempt will be made to ensure a variety of types and levels.

Course Offerings in the Department of Sociology and Anthropology

| | | | |
|-------------------------------------|---|---|---------------------------------------|
| Principles | 56.100 08.100 08.110 | | 53.400 |
| Theory and Methods | 56.200 56.205 | 56.305 53.370, 53.306, 54.310, 08.307*, 08.301*, 08.306* | 53.450* |
| Societies | 08.206 56.220 | 56.320 | 56.320 53.445*, 53.451* 53.456* |
| Ethnography | 54.230 | (54.330) 54.362 | 54.410 54.470* |
| Institutions and Organizations | 56.241 56.243 53.245 53.246* 53.256* | 53.312* 53.315* 53.350* 53.355 54.331* 54.332* 54.333* 54.334* | |
| Social Differentiation and Change | 56.235 | 56.358 56.360 53.345* 53.347* | 56.465* 53.446* |
| Social Psychology Micro-processes | 53.210 53.255* 08.255 | 54.372* 54.371* | 53.461* |
| Language and Communication | | (54.301*), (54.302*), 54.303*), (54.304*) | 54.430 |
| Demography and Ecology | 56.253* 53.251 53.254* 54.206* 54.207* 54.208* 54.225 | 53.335* 53.338 53.351* 54.373* | 53.451*, 53.456* |
| Applied Sociology and Social Policy | 08.260* 08.270 | 08.373* 08.375* 08.377* 08.380 | 53.443 |

The chart is intended as a guide to students in their selection of courses and programs. The courses offered by the Department are arranged, according to their principal emphasis, into the several fields or areas which, together, reflect the Department's interests and capabilities. (Since most courses have other aims as well, they can be grouped under more than one heading.) The courses are also arranged by level and by discipline — Sociology-Anthropology (56), Sociology (53), Anthropology (54) and Sociology at St. Patrick's College (08). Courses in parentheses are those offered outside the Department which students may apply to their Departmental requirements.

In this way students may be helped to identify some of the similarities and differences among courses, as well as their possible interconnections. Students are urged to choose courses with an eye both to their complementarity and their diversity.

Soviet and East European Studies

Institute of Soviet and East European Studies

For details of program offered by the Institute see pp. 326-328.

Courses Offered

Soviet Studies 55.400*

Aspects of Eastern Europe

An interdisciplinary seminar in aspects of the study of Eastern Europe with specific content dependent on the current emphasis and resources of the program of the Institute. Recommended for the Institute of Soviet and East European Studies Honours students.

Not offered 1977-78.

Soviet Studies 55.401*

Aspects of Eastern Europe

See description of Soviet Studies 55.400*.

Not offered 1977-78.

Soviet Studies 55.402*

Aspects of Eastern Europe

See description of Soviet Studies 55.400*.

Not offered 1977-78.

Soviet Studies 55.490

Tutorial in Soviet and East European Studies

Prerequisite: Permission of the Institute.

Soviet Studies 55.498

Honours Essay

Prerequisite: Permission of the Institute.

Soviet Studies 55.500

Interdisciplinary Seminar on the Soviet Union and Eastern Europe

Prerequisite: Permission of the Institute.

Interfaculty

Computing Science

Co-ordinator

R.J.A. Buhr, *Department of Systems Engineering and Computing Science*

General Information

Computing Science at Carleton is available as a component of a number of degree programs at various levels of concentration from a single, introductory course to a combined Major or Honours program. Entry into a program involving Computing Science is effected through an initial, non-Computing Science major area such as Biology, Chemistry, Commerce, Economics, Engineering, Geology, Mathematics, Physics, Political Science, Psychology, or Sociology.

Choice of an appropriate Computing Science component is then made within the framework of the initial Major area. Students in Engineering, Commerce and the Social Sciences can accomplish this by appropriate choices of electives to make up a Minor program. Students in Science can choose Combined Majors or Honours programs in Computing Science and Mathematical Sciences or in Computing Science and Integrated Science Studies; alternatively they can take a Science continuation in Computing Science. A Carleton graduate with a strong Minor or Combined Majors or Honours in Computing Science can often proceed directly to a graduate program in Computing Science or a related area.

Carleton's Computing Science program takes full advantage of campus-wide computing expertise and computing resources. The majority of courses are offered by the Department of Systems Engineering and Computing Science. Courses in the program are also offered, however, by faculty and sessional lecturers from Arts, Social Sciences, Commerce, Science, Mathematics and Computer Services.

The main computing resources for the program are provided by the time sharing remote batch and batch facilities of the University's Xerox Sigma-9 computer system. Features of the system include a file management system; comprehensive facilities for interactively building and editing data and program files; availability of FORTRAN, FLAG, COBOL, XPL, PASCAL, FACET, MACRO-II and APL language processors as well as other processors such as IFTRAN and EDMS, and comprehensive subroutine libraries and special software packages in various application areas.

Introductory Courses

Students must normally take at least one full or two half First-year-level computing courses as part of a Computing Science program. This requirement is satisfied by the following half course pairs and single full courses which are considered to be equivalent: Computing

Science 95.103* and 95.102*; Computing Science 95.101* and 95.102*; Engineering 94.165. The requirement is also satisfied by Computing Science 95.102* and 95.104*. Note that because each of the courses Computing Science 95.101*, 95.102*, 95.103* and 95.104* duplicates certain introductory material, credit will not normally be allowed for more than two of them; students should take Computing Science 95.204* instead of a third introductory course. Note also that credit will not be allowed for both Computing Science 95.101* and 95.103*.

Note that Computing Science 95.102* is compulsory for a Computing Science Minor or Combined Program (except for those Engineering and Commerce Students who have taken this material as part of Engineering 94.165 and Accounting/Economics 41/43.390, respectively).

Students with suitable programming experience may find it possible to proceed directly into second-level courses without taking first-level prerequisites, by demonstrating knowledge of the material to the satisfaction of the Computing Science Co-ordinator.

Special Interest Streams in Computing Science

Special Interest Streams in Computing Science are listed in the following chart in the areas of Programming and Software Organization, Software and Hardware Engineering, Management and Business Applications, Scientific Applications and Theory of Computing Science.

The streams are comprised of two types of courses: core courses, with unique Computing Science numbers, are offered by the Department of Systems Engineering and Computing Science; additional courses are cross-listed from other parts of the calendar and are accessible to students from all areas of the university outside the offering Departments as Computing Science courses.

Carleton's Computing Science program as reflected in these special interest streams has a unique applications-oriented emphasis which is of paramount importance in making the program relevant to both students and their potential employers.

The core of the program emphasizes facility in programming and in designing computer programs, familiarity with a variety of programming languages and their appropriateness for different purposes and a practical knowledge of computer system organization, at both the hardware and software levels. Theoretical topics are embedded in this core material as appropriate.

This emphasis enables a student interested mainly in applications of computing in areas such as Commerce, Engineering, Science and Social Science, to pursue a highly relevant program of core courses combined with courses on computing applications in a particular area without having to take first a sequence of theoretical subjects of interest mainly to computing science.

specialists. It also enables a student with specialist interests in computer hardware, software and systems to obtain in-depth practical training in these areas.

For students with a more theoretical interest courses are available which allow specialization in Theory of Computing Science, including computer-oriented Mathematics courses. For such students the Computing Science core courses provide an important contact with practical issues and problems in computing.

Note that certain courses in the Special Interest Streams have non-Computing Science courses as prerequisites.

Some Possible Special Interest Streams in Computing Science

1. Programming and Software Organization
2. Software and Hardware Engineering
3. Management and Business Systems
4. Scientific Applications
5. Theory of Computing Science

| Course | Core | Offered by | Special Interest Streams | | | | |
|--|------|------------|--------------------------|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| | | Various | X | X | X | X | X |
| 95.201* Introduction to Systems Software | Y | SE/CS | X | - | * | * | X |
| 95.204* Programming Languages I | Y | SE/CS | X | X | X | X | X |
| 95.207* Programming Languages II | Y | SE/CS | X | * | - | X | X |
| 95.290* Computers in Business | | C | - | - | X | - | - |
| 95.291* Computer Applications in Commerce | | C | - | - | X | - | - |
| 95.302* Compiler Construction | Y | SE/CS | X | X | - | - | X |
| 95.303* Real-Time and Hybrid Computing | | E | X | X | - | - | - |
| 95.304* File Structures and Data Bases | Y | SE/CS | X | * | X | X | * |
| 95.310* Systems Analysis | | E | * | - | X | - | - |
| 95.366* Computer Applications | | E | - | - | - | * | - |
| 95.384* Information Structures | | M | X | - | X | X | X |
| 95.385* Discrete Structures and Applications | | M | - | * | - | * | X |
| 95.386* Numerical Analysis | | M | - | - | - | X | X |
| 95.387* Mathematical Software | | M | * | - | - | X | * |
| 95.391* Business Data Processing Systems | | C | - | - | X | - | - |
| 95.401* Operating Systems | Y | SE/CS | X | X | * | * | X |
| 95.405* Discrete Simulation and its Applications | | E | * | * | - | X | - |
| 95.457* Introduction to Computer Architecture | | E | - | X | - | - | - |
| 95.461* Programmable Logic Systems | | E | - | X | - | - | - |
| 95.466* Switching Circuits | | E | - | X | - | - | - |
| 95.480* Introduction to Software Engineering | | E | X | * | X | X | - |
| 95.481* Software Engineering Project | | E | X | * | X | X | - |
| 95.483* Topics in Applied Logic | | M | - | - | - | - | X |
| 95.485* Theory of Automata | | M | - | - | - | - | X |
| 95.486* Numerical Analysis | | M | - | - | - | * | * |

Legend

SE/CS - Systems Engineering and Computing Science

M - Mathematics

C - Commerce (Management Studies)

X - Of Primary Interest

* - Of interest

Certain courses are restricted with respect to the credit allowable for them as part of the minimum Computing Science requirements of a Minor or Combined program: thus, credit will not be allowed for both Computing Science 95.201* and 95.303* as part of the minimum course requirement, nor for either of 95.290* and 95.291*. However all of these courses are creditable and appropriate as additional electives in a degree program.

Courses may be selected from these Special Interest Streams to make up a Minor, Combined Major,

Combined Honours or Science Continuation program as described below. To qualify as Minor, Combined Major or Honours program, minimum course requirements beyond the 100 level must normally be selected from those courses in a particular Special Interest Stream designated as "of primary interest"; furthermore at least half of the courses in a program must be "core" Computing Science courses.

Credit for Computing Science 95.481*, "Software Engineering Project" could be obtainable as part of a software-oriented Fourth-year project. Apart from this the Fourth-year project is extra to these requirements.

Minor Programs

Students may take a Minor program in Computing Science by choosing electives from one of the Computing Science Special Interest Streams. A Minor program is assumed to consist of a minimum of four full courses (five full courses for students in Engineering) including one full First-year level introductory course in computing. For example, for students in Engineering a Minor program would consist of Engineering 94.165 together with four full courses in Computing Science taken as Engineering or Scientific electives; a Minor for students in Engineering could also consist of six full courses consisting of Engineering 94.165, four Engineering or Scientific electives and one Humanities or Social Sciences elective.

Combined Majors and Honours Programs

A Combined Major program has a minimum of four full Computing Science courses; a Combined Honours program has a minimum of six. The requirements can be satisfied as follows:

Computing Science and Mathematical Sciences:

A student in this program will follow the Computer Mathematics stream of the Mathematical Sciences program and in addition will take a Science Continuation consisting of two full Computing Science courses in addition to the Computing Science courses in the Computer Mathematics Program.

Computing Science and Integrated Science Studies

Students in the Science faculty may follow a program in Computing Science and Integrated Science Studies which allows more options in Experimental Sciences than the Combined program with Mathematical Sciences. In this program students will select a three full-course non-Science sequence for the Pass degree or a four full-course non-Science sequence for the Honours degree from Computing Science. In addition students will be required to make up from their electives an additional one or two full courses in Computing Science for the Pass or Honours degrees, respectively.

Science Continuation Programs in Computing Science

Students in Science who are interested in obtaining some exposure to Computing Science but who do not wish to pursue the subject in depth may take a two full-course Science Continuation program in Computing Science. Such students should note that for this purpose 100-level Computing Science courses are counted as Second year level by the Faculty of Science.

Graduate Courses

Students should take note of courses at the graduate level in the Departments of Systems Engineering and Computing Science and of Mathematics. With special permission advanced undergraduates may be allowed

to take certain of the graduate courses offered by these Departments to strengthen a Minor program in Computing Science. Examples of courses available are:

Systems Engineering and Computing Science

- 94.517 Queuing, Scheduling, and Control of Information Systems
- 94.518 Topics in Information Systems Engineering
- 94.521 Communications/Computer Networks
- 94.524 Communications - Computer System Architecture
- 94.557 Fundamentals of Discrete Systems
- 94.558 Digital Machine Architecture
- 94.560 Methods for Engineering Applications of Digital Computers
- 94.571 Real Time Systems
- 94.572 Topics in Software Engineering
- 94.573 Integrated Data Base Systems
- 94.574 Software Engineering
- 94.575 Software Translators and Their Applications
- 94.576 Computer System Performance Analysis
- 94.577 Teleprocessing Software Design

Mathematics

- 70.586 Numerical Analysis
- 70.587 Formal Languages and Syntax Analysis

Joint Systems Engineering/Mathematics Courses

- 70/94.582 Topics in Information and Systems Science

Courses Offered

Some of the following Computing Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course; students should register in such a course under the Computing Science number only if they are not in the Department offering the course.

Note:

In some cases courses listed as being offered in the Evening division may be scheduled at 4.30 p.m.

In all courses with programming assignments students will usually find it necessary to be on campus at other than the scheduled lecture periods to make use of computing facilities.

*Computing Science 95.101**

Introduction to Computers for the Social Sciences

This course is intended to give Arts and Social Science students an understanding of programming logic, the ability to write algorithms and flowcharts, a working knowledge of FORTRAN IV, and experience in using SPSS as an example of a library program. Topics covered include: Simple concepts of how a computer works and technicalities of using the terminal; Logic

(algorithms and flowcharts); Introduction to FORTRAN — conditionals, branching, logical IF'S, DO loops, lists, tables, subscripts, dimensioning, input and output, subroutines; SPSS. Credit will not be given for both this course and Computing Science 95.103*. This course cannot be taken for credit by students in Engineering or Science.

Text: Various manuals relating to the campus computer system.

Day and Evening divisions, First term: Lectures three hours a week.

Susan Richer

Computing Science 95.102*

Introduction to Computing Science

This course is intended to be taken together with Computing Science 95.101* or 95.103* by those students who are interested in taking subsequent Computing Science courses. It may be taken on its own, however, as a basic introduction to computer concepts. An introduction to the organization and operation of computer systems is given, based on the FACET pseudo-computer. The concepts of assemblers are explained, using the FACET assembler. Lectures and programming exercises will introduce the students to a variety of topics, including indexing, indirect addressing, subroutines, data structures and sorting and searching. (Also listed as Science 60.202*.)

Text: Bergman, Bruckner, *Introduction to Computers and Computer Programming*.

References: Various manuals relating to the campus computer system.

Day division, First term and Evening division, Second term: Lectures two hours a week, workshop two hours a week.

I. Reichstein

Computing Science 95.103*

Introduction to Scientific Computing

A first course in computer programming primarily for students in the Faculty of Science. Introduction to computers and algorithms. Use of the Carleton time-sharing system. Introduction to FORTRAN programming through examples taken from mathematics and science. Basic procedures: summing, sorting, looping. Iterative solutions to problems. Non-numeric programming. Random numbers. Simulation of simple physical systems. The computer system: inside the computer. Use of the batch system. Efficient and structured programming. (Also listed as Science 60.200*.)

Prerequisites: One of Mathematics 69.107*, 69.117*, 69.127*, 69.102, 69.112, which may be taken concurrently.

Credit will not be given for both this course and Computing Science 95.101*.

Texts: McCracken, *A Guide to FORTRAN IV Programming, Second Edition*.

References: Various manuals relating to the computer system on campus.

Day and Evening divisions, First term: Evening division, Second term: Lectures three hours a week.

E. Norminton, P. Sermer

Computing Science 95.104*

Introduction to Data Processing

This course is designed to give students an understanding of data processing by teaching COBOL and illustrating its use in detailed case studies. Besides COBOL, emphasis will be placed on methods of analysis, specification and design. The following topics are covered: Review of operational methods in data processing, implementation and design methods; the COBOL language; sequential file processing including file design, creation, update and backup; report generation, sorting and merging techniques, tape file maintenance; direct access file processing; introduction to data base techniques. Programming assignments in COBOL will be required. (Also listed as Science 60.206*.)

Text: Philippakis and Kazmier, *COBOL for Business Applications*.

Day division, Second term: Evening division, First term: Lectures three hours a week.

T. Gavin, K. Weiss

Computing Science 95.201*

Introduction to Systems Software

This course introduces students to the methods and principles underlying systems software organization through the medium of assembler programming on the PDPII Emulator; its purpose is to prepare students for the study of compilers, operating systems, etc. Control structures in assembler programming, including branching, comparison, looping and branch tables. Creation and processing of basic data structures including arrays, sorted and unsorted symbol tables, simple linked lists and binary trees. The assembly process. Subroutines, co-routines, macros and parameter passing; reentrancy and recursion. Input/output processing using channels and interrupts; overlap of input/output and computation.

Prerequisites: Engineering 94.165; or Computing Science 95.101* and 95.102*; or 95.102* and 95.103*; or 95.102* and 95.104*; or equivalent courses or experience.

Text: Stone and Siewiorek, *Introduction to Computer Organization and Data Structures: PDP-II Edition*.

Reference: Maurer, *Programming: An Introduction to Computer Techniques*.

Day division, First term and Evening division, Second term: Lectures three hours a week.

R. Parson

Computing Science 95.204*

Programming Languages I

This course provides an opportunity for students to develop their programming abilities to an intermediate level in either FORTRAN or COBOL and APL while at the same time studying principles of data types, control and data structures, run-time environments, input/output facilities, special features and capabilities of a variety of programming languages. A major programming assignment will be required in either FORTRAN or COBOL together with minor ones in at least one of the other languages. The major assignment will be on a problem in the student's area of specialization. Laboratory

sessions will be split into two sessions, one for COBOL and one for FORTRAN, to explore advanced features of these languages. Emphasis in the laboratories will be on details of the language while emphasis in the lectures will be on principles and examples.

Prerequisites: Engineering 94.165; or Computing Science 95.101* and 95.102*; or 95.102* and 95.103*; or 95.102* and 95.104*; or equivalent courses or experience.

Text: Peterson, *Introduction to Programming Languages*.

References: *Xerox Reference Manuals for FLAG, COBOL and APL*; texts for Computing Science 95.103* and 95.104*; Gilman and Rose, *APL/ 360 — An Interactive Approach*.

Day division, First term, Evening division, Second term: Lectures two hours a week. laboratory two hours a week.

S.A. Mahmoud

Computing Science 95.207*

Programming Languages II

This course is complementary to Computing Science 95.204* and aims to increase in both breadth and depth the student's familiarity with special purpose programming languages and processors. Emphasis will be on the "newer" recently developed programming languages as opposed to the more traditional established ones. Students will be expected to do regular programming assignments.

Prerequisites: Engineering 94.165; or Computing Science 95.101* and 95.102*; or 95.102* and 95.103*; or 95.102* and 95.104*; or equivalent courses or experience.

Texts: McKeeman, Horning, and Wortman, *A Compiler Generator*; Jensen and Wirth, *Pascal User Manual and Report*, (Springer Verlag Lecture Notes in Computer Science, #18).

Day division, First term: Lectures three hours a week.

W.R. LaLonde

Computing Science 95.290*

Computers in Business

The purpose of this course is to develop an understanding of computer technology as it applies to business. By surveying the role of the computer and its impact on various business practices, the student is made aware of the potential benefits and costs. In order that the student be able to communicate with equipment vendors and EDP specialists, current hardware and software technologies are described and discussed. Such technologies will include modes of processing, data base, word processing, data entry, teleprocessing, and mini computers. To appreciate the problems in implementing computer systems, various techniques for acquiring business application software will be discussed. (Also listed as Management Studies 42.290*.)

Prerequisite: Computing Science 95.101* or 95.104*.

Day and Evening divisions, First and Second terms.

Computing Science 95.291*

Computer Applications in Commerce

The purpose of this course is to introduce the computer as a problem-solving tool in commerce. Program packages for information processing and quantitative analysis are used to illustrate the solution of problems in statistics, planning, finance, cost accounting and marketing. In addition to selecting package programs, students will be required to develop their own solutions using APL and BASIC. Typical areas from which problems will be selected are: time series analysis, questionnaire processing, PERT/critical path, simulation, portfolio analysis, budgeting and inventory control. This course will draw problem material from courses such as Accounting 41.100, 41.200, 41.325*/326*, Economics 43.220 and Management Studies 42.405*, to provide the student with computational abilities useful in his Commerce program. (Also listed as Management Studies 42.291*.)

Prerequisites: Computing Science 95.101* or 95.104*, and Economics 43.220 (may be taken concurrently).

Day division, Second term.

Computing Science 95.302*

Compiler Construction

This course is intended to familiarize the student with the practical aspects involved in the construction of compilers (programs which translate programming languages to machine language). The following topics are covered: finite state machines and scanners, grammars and parsers (current state of the art LR(K) parsers will be emphasized), code generators (for handling array constructs, PL/1 type structures, procedures, functions, control structures such as IF statements, DO loops, case statements, etc.), and optimization techniques. Programming assignments will involve writing parts of a compiler in a high-level language, and a complete elementary compiler using a translator-writing system.

Prerequisites: Computing Science 95.201* (95.207* desirable).

Text: Gries, *Compiler Construction for Digital Computers*.

References: McKeeman, Horning, Wortman, *A Compiler Generator*; *Compiler Construction: An Advanced Course*, (Springer Verlag Lecture Notes in Computer Science #21), ed. G. Goos and J. Hartmanis.

Evening division, Second term: Lectures three hours a week.

W.R. LaLonde

Computing Science 95.303*

Real-Time Computing Systems

An introduction to the use of minicomputers as real-time, interactive systems, with the PDP-11 and PDP-8 as examples. Computer organization: structure, representation of instructions, numbers, and characters; addressing modes, arithmetic and logical operations. Programming techniques: assembly language coding and interfacing to high level languages. Input/Output: via program control, priority and vectored interrupts, and direct memory access. Peripherals: teletype, register,

programmable clock, analog/digital converters, interactive graphics processor. (Also listed as Engineering 94.303*.)

Prerequisite: Engineering 94.165 or previous experience in assembly language.

References: R. Eckhouse, *Minicomputer Systems: Organization and Programming (PDP-11)*.

One term: Lectures two hours a week, laboratory two hours a week. Offered both terms.

R.J.A. Buhr, L.R. Morris

Computing Science 95.304*

File Structures and Data Bases

Storage and retrieval hardware: properties, cost, performance implications. Information structures: lists, trees, networks; hierarchical and associative relationships. File organizations: lists, linked lists, multilists, direct and inverted lists. Directories and directory organization. Operations on directories, and files: sorting, merging, posting, searching, accessing, retrieving, inserting, deleting, updating. Complex retrieval operations, e.g. by multiple keys. Data base systems; data definition and manipulation; comparison of existing systems.

Prerequisite: Computing Science 95.201* or 95.204* or 95.384* or 95.303*.

Text: Knuth, *The Art of Computer Programming, Volume III: Searching and Sorting; The Codasyl Report*. Day division, Second term: Lectures three hours a week.

S.A. Mahmoud

Computing Science 95.310*

Systems Analysis

Introduction to the concepts and techniques of problem definition and analysis. Various approaches to system identification, specification and presentation will be discussed. Students will work in teams to test their analysis skills on case studies of information systems. Process specification: decision tables, flow diagrams, state transition techniques, specification languages. Data and file description: forms-oriented techniques, languages. Document description. Phases in a project: feasibility study, input/output analysis and design, document and file design, system design implementation and project control. The course will emphasize applications in computer-based information systems, but the techniques used are of wider applicability. (Also listed as Engineering 94.310*.)

Reference: Gore and Stubbe, *Elements of Systems Analysis*.

Prerequisite: A full First year course in Computing Science.

First term: Lectures three hours a week.

J.S. Riordon

Computing Science 95.366*

Computer Applications

Analysis of engineering problems with the use of the digital computer including mathematical modelling, organization of the equations and methods of solution using analytical and numerical methods. Topics in

numerical methods include: solution of single algebraic and transcendental equations and sets of linear algebraic equations, determination of eigenvalues and eigenvectors; curve fitting by difference and least squares methods; numerical integration, differentiation; solution of ordinary and partial differential equations. These methods are illustrated by application to typical engineering problems. An important part of the course is the use of the computer. This is realized by course problems and a project in which the computer is used to solve a typical engineering problem. (Also listed as Engineering 94.366*.)

Credit is not allowed for both this course and Computing Science 95.386*.

Prerequisites: Third year registration in Engineering or Physics, and an introductory programming course.

Text: Southworth and Deleeuw, *Digital Computation and Numerical Methods*.

References: James, Smith and Wolford, *Applied Numerical Methods*; Crandall, *Engineering Analysis*.

Day division, One term: Lectures and tutorials three hours a week. Offered both terms.

J.K. Cavers

Computing Science 95.384*

Information Structures

Introduction to discrete structures; graphs and digraphs; trees, forests, binary trees, and their applications; computer representations of structures; pushdown stores, lists, and list structures; list processing; sorting and searching techniques; storage of arrays and sparse matrices; storage allocation at execution time; digraphs of programs. (Also listed as Mathematics 69.384*.)

Prerequisites: A Second-year Mathematics course and one of Computing Science 95.201*, 95.204*, 95.207*, which may be taken concurrently.

Day division, First term: Lectures three hours a week and one tutorial.

Computing Science 95.385*

Discrete Structures and Applications

Algebraic structures; lattices, Boolean algebra elements of the theory of directed and undirected graphs; combinatorics; Polya theory of enumeration languages over an alphabet; switching circuits, optimization and complete design, algebraic codes, flow charts, connectivity, minimal paths. (Also listed as Mathematics 70.385*.)

Prerequisites: Mathematics 69.384* or 69.218* and an introductory Computing Science course.

Day division, Second term.

C. Garner

Computing Science 95.386*

Numerical Analysis

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. (Also listed as Mathematics 69.386*.)

Credit is not allowed for both this course and Computing Science 95.366*.

Prerequisites: Computing Science 95.103*, Mathematics 69.102 and 69.112, or 69.207* and 69.217*, or 69.201 or 69.202 or 69.203.

Day division, First term.

E. Hughes

Computing Science 95.387*

Mathematical Software

Incorporation of basic numerical methods into efficient, reliable software. The course will include examination of existing software systems e.g., linear systems, non-linear systems, optimization, or differential equations. (Also listed as Mathematics 69.387*.)

Prerequisite: Mathematics 69.386* or Computing Science 95.366*.

Day division, Second term: Lectures three hours a week and one hour tutorial.

E. Norminton

Computing Science 95.391*

Business Data Processing Systems

The purpose of this course is to develop the skills necessary to participate in the construction of business data processing systems. Computing and non-computing students will form project teams to design and implement a particular system. Lectures will be based on case studies and seminars. Student projects will be drawn, where possible, from actual problem areas in the business community. Typical projects will include: inventory control, payroll, general ledger, project cost/accounting, simulation, information retrieval, computer auditing. (Also listed as Management Studies 42.391*.)

Prerequisites: Accounting 41.100, Management Studies 42.250*, Computing Science 95.101* or 95.104*.

Day division, Second term: Lectures three hours a week.

Computing Science 95.401*

Operating Systems

This course presents principles and practice of operating systems organization which provide a unifying view of existing operating systems and a basis for the design of future ones. Emphasis is on the control of co-operating concurrent processes and on the management of shared resources, including system organization, parallel programming and performance analysis. The course is designed for undergraduate and graduate students with the equivalent of a Minor program in Computing Science up to and including the Third year level and with a background in elementary calculus and probability. Lectures will cover programming techniques and algorithms for handling concurrency; structure and implementation of the nucleus of an operating system to handle short term scheduling; performance implications of scheduling and memory management strategies; deadlock problems; special problems as time permits including distributed processing, protection and recovery, integrity, reliability. Lectures will be supplemented with PDP 11 assembler programming assignments involving the sharing of queues, buffers and common

data among concurrent processes in an interrupt-driven environment.

Text: Brinch-Hansen, *Operating Systems Principles*.

Reference: Shaw, *The Logical Design of Operating Systems*; Habermann, *Introduction to Operating System Design*.

Evening division, First term: Lectures three hours a week.

R.J.A. Buhr

Computing Science 95.457*

Introduction to the Architecture of Computer Systems

A typical mini-computer is designed and variations incorporated to illustrate the hardware-software trade-offs often encountered. Bus oriented systems and bus protocols: autonomous peripherals, arbitrators, and multiprocessing. Systems controllers on studied machines, including ROMs. The interconnection of machines via standard communication facilities. Telephone lines, line conditioning, echo suppression, and various services (full-half simplex, simplex). EAI interface standards: currently available modems. The elements of packet and message switching are introduced. Asynchronous time division multiplexing is studied. Finally, the latest papers on distributed function architectures will be used as project assignments. (Also listed as Engineering 94.457*.)

Prerequisite: Computing Science 95.466*.

Second term: Lectures three hours a week.

B.A. Bowen

Computing Science 95.461*

Programmable Logic Systems

Introduction to microcomputer architecture. Characteristics and applications, major features of current systems. Techniques of microprogramming, examples of input/output, use of subroutines, arithmetic subroutines, logical operations, delays, time outs, holds, etc., discussion of programming languages and assemblers. Design studies will be selected from calculators, interface controllers, intelligent terminals, graphics, compilers, etc., economics and technical decisions in selecting and implementing a microcomputer system. (Also listed as Engineering 94.461*.)

Prerequisite: Computing Science 95.466*.

References: Assigned papers and notes.

Day division, Second term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks.

B.A. Bowen

Computing Science 95.466*

Switching Circuits

Introduction: Gates, coding, iterative circuits, state concepts. Combinational circuit design: Canonical forms, switching algebra, maps, multiple output networks, wired-OR networks. Memories: latch, flip flop, shift register, RAM and ROM. Sequential circuitry: synchronous counters and scalars. Special purpose structures: timing and mode circuitry, pipeline organization, serial organization, small computer characteristics

including interfacing, input/output considerations. (Also listed as Engineering 94.466*.)

Prerequisite: Third year registration or permission of the instructor.

Text: Peatman, *The Design of Digital Systems*.

Day division, One term: Lectures and tutorials three hours a week, laboratory three hours alternate weeks. Offered both terms.

M.A. Copeland, M.E. Ulug

Computing Science 95.480*

Introduction to Software Engineering

This course introduces students to the problems and methods of specifying, designing, and producing correct, structured, and modular software. Topics to be discussed include: programming style, structured programming, top down and bottom up programming, chief programmer team concepts, information "hiding" approaches, table driven techniques, decision tables, debugging strategies, and techniques for proving programs correct. Students will normally take Computing Science 95.481* in conjunction with this course. (Also listed as Engineering 94.480*.)

Prerequisite: Permission of the instructor.

Texts: Kernighan and Plauger, *The Elements of Programming Style*; McGowan and Kelly, *Top Down Structured Programming Techniques*.

First term: Lectures three hours a week.

W.R. LaLonde

Computing Science 95.481*

Software Engineering Project

Students will participate in a team project to develop a small piece of stand-alone software in an organized and structured fashion. Non-numeric applications will be emphasized. All phases of the project will be considered equally important: design, implementation, testing and documentation. (Also listed as Engineering 94.481*.)

Prerequisite: Computing Science 95.480* or concurrent registration in Computing Science 95.480*.

One term: Offered both terms.

D.C. Coll

Computing Science 95.483*

Topics in Applied Logic

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic. (Also listed as Mathematics 70.483*.)

Prerequisite: Mathematics 70.210 or permission of the Department.

Day division, Second term: Lectures three hours a week and one hour tutorial.

J.C. Poland

Computing Science 95.485*

Theory of Automata

Algebraic structure of sequential machines, decomposition of machines; finite automata, formal languages; complexity. (Also listed as Mathematics 70.485*.)

Prerequisite: Mathematics 70.210 or Computing Science 95.385* or permission of the instructor.

Day division, First term.

V. Dlab

Computing Science 95.486*

Numerical Analysis

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas. (Also listed as Mathematics 70.486*.)

Prerequisite: Permission of the instructor.

Day division, Second term.

P.R. Beesack

Integrated Science Studies

General Information

In Integrated Science Studies a student can create a logically coherent and structured program integrating a strong base of science studies with substantial work in a second discipline in another faculty (e.g. engineering, computer science, political science, economics, journalism). Committee members will help the individual to construct a suitable program of courses.

There are nearly as many different patterns as there are students in the program. Some areas of study (combining both science and non-science components) that are available through the program include environmental sciences, science and management studies, behavioural sciences, information sciences, and pre-medical studies. Additional information can be found in the program description in the Science Faculty listings. See pp. 275-276.

Interdisciplinary Courses

Humanities

Humanities 10.100

An examination of selected works, from Biblical times to the present, illustrating the various dominant views on the nature of man and his attempts to understand himself and the world about him.

Prerequisite: First year standing or higher.

Not offered 1977-78.

Humanities 10.200*

An examination of selected works illustrating various dominant views on the nature of man and his attempts to understand himself and the world about him in the context of the twentieth century as seen from the points of view of history, philosophy, social science and literature.

Prerequisite: Second year standing or higher.

Not offered 1977-78.

Science

Science 60.100

Man and His Environment (for Non-Science Students)

Introductory lectures treat the historical background of science, development of scientific methodology, and what science is and is not. The first half of the First term explores the origin, development, and evolution of the universe, stars, planetary systems, the elements, the earth, bio-chemicals, and life on earth. The goal is to show where man is in the universe, what he is, and how he came to be, as learned by science. The second half of the First term explores the subjects of evolution and ecology, or the generalizations of how living things live and respond in relationship to other living things, and the non-living environment, without emphasis on man. The Second term explores the activities of man and their ecological consequences, or their impact on the environment. Topics include man's evolution and his use and abuse of land, nature, fire, water, the oceans, air, and wildlife. Pollution topics include water, air, heat, radiation, insecticides, organic and inorganic chemicals and pest species. Lastly are considered human problems of the house, the city, transportation, solid wastes, human population growth characteristics, the growing demand for food, a search for causes (religion, economics, etc.), the limits to growth, the future, and what can be done.

Not offered 1977-78.

Science 60.200*

Introduction to Scientific Computing

Also listed as Computing Science 95.103*. See p.405.

Science 60.202*

Introduction to Computing Science

Also listed as Computing Science 95.102*. See p.405.

Science 60.206*

Introduction to Data Processing

Also listed as Computing Science 95.104*. See p.405.

Other Courses

Computing Science, see p. 401.

Technology, Society and Environment Studies, see p. 412.

St. Patrick's College Interdisciplinary courses, see p. 230.

Technology, Society, Environment Studies

Members of the Committee

Chairman

J. Lukasiewicz (*Engineering*)

Members

C. Aasen (*Architecture*)

R.L. Clarke (*Physics*)

M.B. Fenton (*Biology*)

P. Hamel (*Chaplaincy*)

A.T. Hodge (*Classics*)

C.H. Langford (*Chemistry*)

J. Moore (*Geology*)

R. Morrison (*Physics*)

F.K. North (*Geology*)

S.B. Peck (*Science*)

A.I. Wallace (*Geography*)

Two Student Representatives

Associated Members

Several members of the Faculty serve on the TSE Studies Committee as Associated Members.

General Information

It is becoming increasingly apparent that:

1. the future of the Western societies depends on their ability to cope with the complex problems resulting from the interactions of Technology, Society and the Environment (TSE);
2. the effectiveness of the democratic political process is contingent upon the perception and comprehension of these phenomena by the electorate;
3. because of the complexity and the wide range of the problems involved, their understanding cannot be gained through specialized education in traditional disciplines, but requires a multidisciplinary approach.

The two multidisciplinary courses listed below, offered under the direction of the TSE Studies Committee, seek to fulfill this need. They are designed to provide students from all faculties with a solid basis for understanding the major problems of industrialized society, and with first-hand appreciation, through research project work, of the complexities involved. The TSE courses are open to all students beyond the First year; these courses are especially recommended for students at the Third and Fourth year levels. Students enrolled in three-year programs, however, who would like to take both courses are encouraged to take one in the Second year.

TSE 59.301 deals with the major aspects of the interaction of technology and society, whereas TSE 59.302 addresses the problems of resources and of the impact of technology on the natural environment. Together, the two courses provide a fairly complete coverage of the TSE interactions, and students are encouraged to take the courses in consecutive years, in

the order which best suits their timetables. Each course consists of about 60 lectures given by members of various faculties and guest speakers, and research project work carried out in small groups of students from different disciplines under the direction of faculty advisers. Project topics are assigned according to students' preferences.

Courses Offered

Technology, Society, Environment 59.301

Technology-Society Interaction

A course intended to introduce students from all faculties to the study of major aspects of the interaction of technology and society. Specific topics include: social, economic, and psychological impact of technology in historical perspective, with case studies of innovations; technology as a motive force in history and as an element in human culture; the modernization process; science and technology in the developing countries; technology transfer; characteristics of industrial civilization. Social management of technology: Canadian and international examples. Major technological systems: transport, communications, energy, urban systems. Assessment and control of technology. Forecasting. Limits to growth. Perspectives on the human future. A research project will comprise a significant portion of the course work.

Prerequisite: Registration in Second or higher year.

Text: *Reading Materials*, TSE 59.301.

Lectures and workshops three hours a week.

J. Lukasiewicz (*Co-ordinator*), C. Aasen, G. Carmody, M.B. Fenton, C. Langford, T.A. Maslove, R. Morrison, D.I. Pool, J.S. Riordon, D.A. Smith, A.I. Wallace, C.M. Woodside and others.

Technology, Society, Environment 59.302

Interaction of Technological Society with the Natural Environment and its Resources

A course intended to introduce students from all faculties to major aspects of the interaction between society and its technology, on the one hand, and the natural environment and its resources, on the other. Principal subdivisions of material of the course are: man versus nature in historical perspective; ecosystems; biogeochemical and energy cycles; food and population; renewable and non-renewable resources; energy as the basis of civilization; pollution in all its aspects; social management of the environment and its resources; case studies of technological impact on the environment. A research project will comprise a significant portion of the course work.

Prerequisite: Registration in Second or higher year.

Texts: R. Bryan, *Much is taken, much remains*; G.T. Miller, *Living in the Environment*; G. Manuel, *The Fourth World*.

Lectures and workshops three hours a week.

P. Hamel (*Co-ordinator*), R. Abbott, R.L. Clarke, M.B. Fenton, J. Lambert, J. Moore, F.K. North, S.B. Peck, J.T. Rogers, M. Smith, G. Tattrie, W. Tupper, A.I. Wallace and others.

Other Related Courses

Other courses related to the TSE area offered by various departments and schools within the University are listed for the convenience of students. Detailed course descriptions are given under the appropriate faculty or department. Please note all prerequisite conditions prescribed for these courses must be met.

Architecture

- 202* Colloquium 2
- 301* Colloquium 3
- 324* Social Environment Systems
- 423* The Human Development/Built Environment Interface I
- 424* The Human Development/Built Environment Interface II
- 4360* Futures (Long Range) Planning

Biology

- 190 Biology and Man
- 391* Biology in Society

Classics

- 235 Ancient Science and Technology

Economics

- 101 Contemporary Economic Issues
- 363* Introduction to Economic Development
- 365* The Economics of Planning

Engineering

- 480* Resources Planning

English

- 207 Literature and the Sciences

Geography

- 5101 The Geographic Web
- 5230 Cultural Geography
- 5330 Developing Nations of Inter-Tropical Africa
- 5333* Land Use, Regional Development and Planning Canada
- 5334* Renewable Resource Planning in a Local Area
- 5351 Geography of the Northlands
- 5445* Land Resource Use

Geology

- 7111* Geology, the Environment and Man I
- 7112* Geology, the Environment and Man II
- 7204* Earth, Resources and Society
- 7311* Applied Environmental Geology

Integrated Science Studies

- 0300 Seminar on Selected Topics in Science

Interdisciplinary

- 0100 Humanities
- 0200 Humanities

Journalism

- 28.100 and 28.110 Introduction to Human Communication
- 28.200 Problems of the Mass Media
- 28.300 The Modern Environment
- 28.434* Media and Society I

Law

- 51.380 Law of Environmental Quality

Philosophy

- 32.232* Philosophy of Science

Physics

- 75.291* Physics of the Environment I
- 75.292* Physics of the Environment II

Political Science

- 47.403* Politics and the Media

Religion

- 32.200 The Encounter of Science and Religion

Science

- 60.100 Man and His Environment

Sociology and Anthropology

- 53.246* Industrial Sociology
- 56.253* Introduction to Human Ecology
- 53.254* Urban Sociology
- 53.312* Science and Society
- 54.333* Economics Systems
- 56.360 Social Change and Modernization
- 08.260* Community
- 08.380 Social Policy

Interfaculty Committee on Women's Studies

General Information

Although there is no Women's Studies degree program at Carleton, Women's Studies courses have been offered at the University since 1971-1972. Such courses have developed at Carleton, as they have elsewhere, in response to the fact that the experience of women has not received adequate attention from the academic community.

At Carleton, Women's Studies courses are offered by several departments, and faculty members and graduate students are pursuing research in the area in many departments. The Interfaculty Committee on Women's Studies was created to provide a measure of co-ordination for these activities. In addition to its co-ordinating functions, the Committee hopes to foster throughout the University an awareness of an obligation on the part of all academic disciplines to include a fuller treatment of women's contribution and experience than has been offered in the past.

Courses Offered

Although the Committee itself offers no courses, the following course offerings are listed here for the convenience of students. Detailed course descriptions are given under the appropriate faculty and department.

Faculty of Arts

Classics

13.344 Women in Antiquity

History

24.354 Women and Society in Western Europe and North America 1700-1970 (Offered at St. Patrick's College)

24.459 Family and Sexuality in the Victorian Age

Religion

34.201 Women in Religious Traditions

Faculty of Graduate Studies and Research

School of Social Work

52.506* Women and Welfare

St. Patrick's College

Interdisciplinary

04.288 Introduction to Women's Studies

Faculty of Social Sciences

Law

51.301* Women and the Legal Process

Political Science

47.313* Women in Politics: A Comparative Perspective

Psychology

49.361* Psychology of Women

Sociology

53.485 Contemporary Problems in Sociology:

Topic for 1977-1978 *Women and Contemporary Society*

The courses which appear in the following list are offered exclusively or primarily for students specializing in another discipline. This section is intended to assist students to find courses of interest which would otherwise be difficult to locate in the calendar. Descriptions for these courses are contained in the appropriate Departmental section.

Art History

105 A Survey of Canadian and American Art

Biology

190 Biology and Man

Chemistry

106 Chemistry, Man and Society
222 Introductory Organic Chemistry

Classics

100 Some Aspects of Greek and Roman Civilization

Comparative Literature

361 Studies in Literary Genres
401 The Development of the Tristan/Isolde Legend
410 Critical Approaches to Literature I: Linguistic Stylistics
420 Critical Approaches to Literature II: Historical and/or Aesthetic
430 Critical Approaches to Literature III: Psychological Criticism
440 Critical Approaches to Literature IV: Sociology of Literature

Economics

201* Introduction to Micro-Economic Theory and Analysis
211* Introduction to Macro-Economic Theory and Analysis

English

100 English Authors from Chaucer to T.S. Eliot
101 English and Continental Texts
102 Form and Tradition

French

001 Elementary French
011 Intermediate French
106* Reading French
107* Practical Phonetics
108 French Language Course for Non-Majors
151 French-Canadian Literature
152 French Literature
181 Civilization I

Geology

101* Introductory Geology for Engineers
111*, 67.112* Geology, The Environment and Man I and II
204* Earth, Resources and Society

German

220 Studies in German Culture and History

Italian

26.210 The Italian Heritage. Literature, Arts and Society in Italy from the Thirteenth Century to the Present Time

Journalism

28.110 Introduction to Human Communication
28.210 The Mass Media in Modern Society
28.351* Communications Law I

Law

51.201 The Elements of Law

Mathematics

69.107* Elementary Calculus I
69.117* Elementary Algebra
69.127* Topics in Calculus and Algebra
69.131* Excursions into Mathematics I
69.132* Excursions into Mathematics II
69.141* Gambling I
69.142* Gambling II
69.201 Intermediate Calculus
69.202 Intermediate Mathematics
69.250 Introduction to Statistical Analysis
69.305* Functions of a Complex Variable
69.306* Mathematical Methods I

Music

30.050 Elementary Materials of Music
30.100 Introduction to the Music of Western Civilization
30.201 The Vocal and Choral Literature of Western Music
30.202 The Keyboard Literature of Western Music
30.203 Orchestral and Chamber Music Literature
30.204 Music of the Western Christian Church from the Reformation to the Present

Physics

75.120 Elementary Astronomy for Science and Engineering Students
75.190 Introduction to Astronomy
75.195 Physics of Music
75.291* Physics of the Environment
75.292* Physics of the Environment
75.302* Advanced Physics Laboratory for Non-Physics Science Students
75.364* Modern Physics

Russian

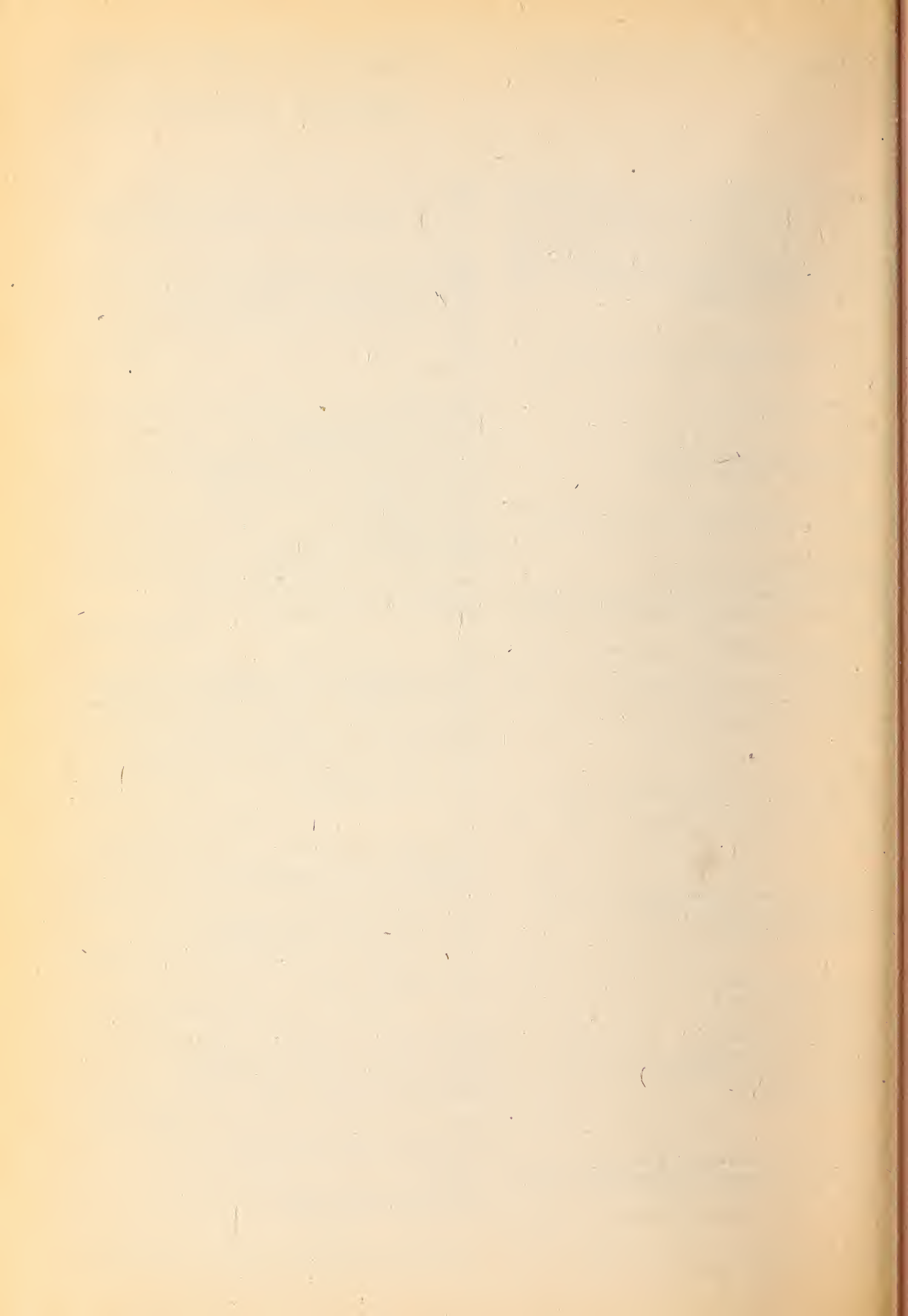
36.110 Russian for Scientists
36.260 Russian Literature in Translation
36.360 Studies in Russian Life and Culture
36.390 Slavic Language Tutorial

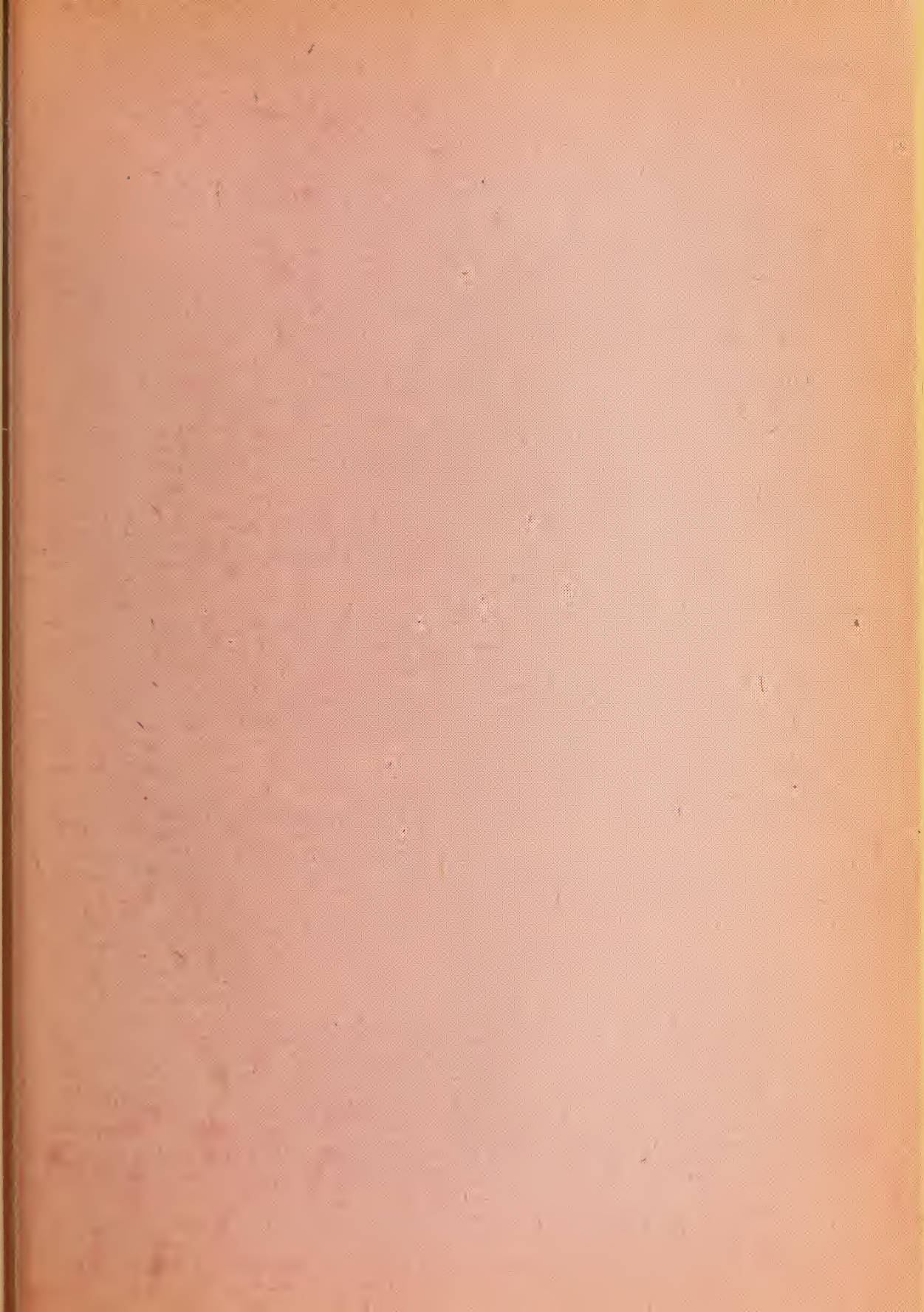
Science

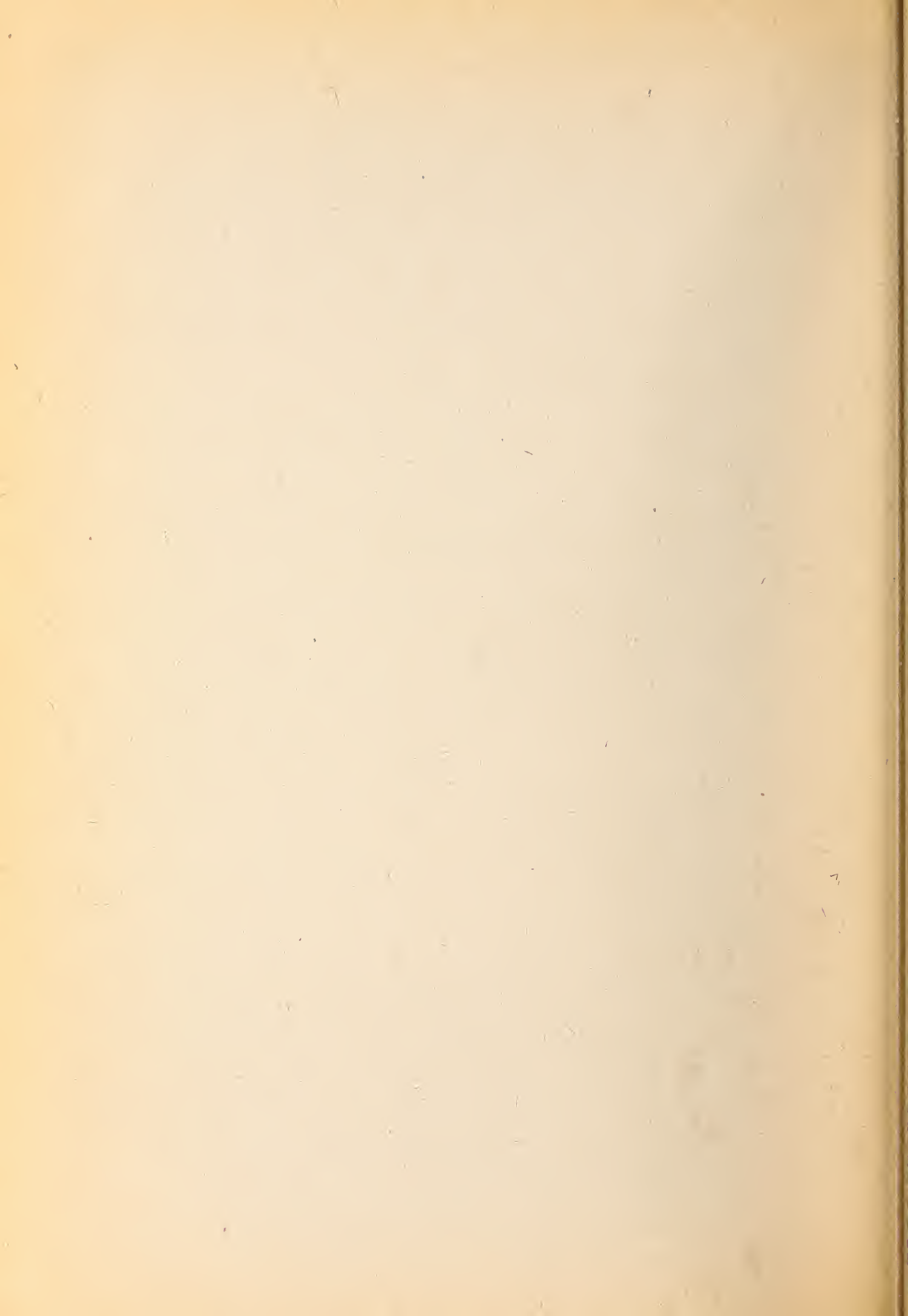
60.100 Man and His Environment

Sociology

53.400 Sociological Analysis







Awards and Financial Assistance

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Awards for Academic Excellence

Medals

The Governor-General's Medal

Awarded annually to the student standing at the head of the graduating class. Donor: His Excellency the Governor-General of Canada. Established 1952.

The President's Medal

Awarded annually in the name of the President of the University to the student standing at the head of the graduating class in St. Patrick's College.

The Chancellor's Medal

Awarded annually in the name of the Chancellor of the University, to a graduating student of outstanding academic achievement.

University Medals

Awarded annually, when merited, to the graduating students standing highest in Arts, Science, Commerce, Journalism, Engineering, and Architecture. Established 1949.

Senate Medals

Awarded, when merited, to graduating students of outstanding academic achievement. Established 1952.

Medal in Engineering (Ontario Association of Professional Engineers)

Awarded annually, when merited, to the graduating student standing highest in Engineering. Established 1961.

Entrance Scholarships

Carleton University offers a number of scholarships, tenable at the University, to students entering a full-time undergraduate program who have completed the Ontario Secondary School Honour Graduation Diploma (or its equivalent) and have demonstrated a high potential for university studies. These scholarships include:

1. the Senior Scholarships, named in honour of former senior officers of the University;
2. general Entrance Scholarships;
3. privately funded scholarships.

They are awarded on the basis of the academic standing maintained by the candidate and such evidence of scholastic aptitude as may be available. *These are continuing scholarships for not more than four years provided the candidate maintains a high academic standing and is registered in a full program of undergraduate courses during the Winter session, (five courses in Science, Commerce, Arts, Social Sciences, Journalism; six courses in Engineering, Industrial Design, Architecture).*

Values:

Winter session: \$1,200, \$1,000 or \$700 for the First and succeeding years.

Spring term: \$400, \$300 or \$200.

Privately Funded Scholarships

Mercy Neal Southam Entrance Scholarships

Entrance scholarships will be awarded annually, if merited, to students entering the First year of Arts, Social Sciences, Journalism, Commerce, Science, Engineering or Architecture at Carleton University. Established in 1949 under the terms of bequest of the late Wilson Mills Southam, the scholarships are in memory of his grandmother, Mercy Neal Southam.

Francis C.C. Lynch Entrance Scholarships

Entrance scholarships have been established for open competition among students entering the First year of Arts, Social Sciences, Science, Commerce, Journalism, Engineering or Architecture. Donor: The late Francis C.C. Lynch. Endowed 1967.

Friends of Carleton Scholarships

Scholarships have been provided for general competition among students entering Carleton University at the senior matriculation level. Donor: The Friends of Carleton University. Established 1967.

Donald William Buchanan Scholarship

Value \$500 approximately. Awarded annually for general competition among students entering Carleton University. Donor: The late Donald William Buchanan. Endowed 1967.

Duchess of Connaught Scholarship

The yield from the endowment of this historic scholarship, amounting to approximately \$350 annually, has been made available to Carleton University by the Laurentian Chapter, I.O.D.E. The scholarship is to be awarded to an able student entering Carleton University, and may be held until graduation, if merited; at which time a new award will be made. Donor: Laurentian Chapter, I.O.D.E. Established at Carleton University, 1960.

Naomi Cook Scholarship Fund

Value \$250 approximately. Awarded annually to students with high academic standing entering Carleton University. Donor: The late Naomi Cook. Endowed 1967.

Ottawa Citizen Scholarship

A scholarship valued at \$1,200 awarded annually, if merited, to a student entering Carleton University from a high school in any one of the following counties in the Ottawa district: nine in Ontario (Carleton, Dundas, Glengary, Grenville, Lanark, Prescott, Renfrew, Russell and Stormont) and four in Quebec (Gatineau, Hull, Papineau and Pontiac). A student admitted with senior matriculation standing will receive \$400 per year for a period of three years; always provided that the student is registered as a regular full-time student at Carleton University and maintains a satisfactory academic standing. Donor: The Ottawa Citizen. Established 1955.

Dobbie Regional Entrance Scholarships

Eight entrance scholarships will be available for 1977-78 for students entering Carleton University on the following distribution: (1) four scholarships available for Ontario (except the City of Ottawa) and the Western provinces and Territories; (2) four scholarships available for Quebec and the Maritime provinces. Donor: The late Jemema Grace Dobbie. Endowed 1967.

Shell Canada Entrance Scholarships

Value \$1,000. Five scholarships awarded annually to students entering a full-time undergraduate program and who have demonstrated high academic performance. These are continuing scholarships for not more than four years provided the candidates maintain a high academic standing and are registered in a full program of undergraduate courses during the Winter session. Donor: Shell Canada Limited. Established 1975.

Dr. Frederick William Charles Mohr Scholarships

Scholarships have been made available for annual competition among students entering Carleton University or proceeding from one year of course to another at the University, and who come from communities within the following Ontario and Quebec counties. Ontario: Renfrew, Russell, Prescott, Glengarry, Stormont, Dundas, Grenville, Carleton, Lanark, Nipissing, Leeds. Quebec: Pontiac, Gatineau, Hull, Papineau, Argenteuil, Temiskaming. These awards are provided through the bequest of the late Dr. F.W.C. Mohr. Donor: The Frederick W.C. Mohr Estate. Endowed 1963.

The Commonwealth Holiday Inns of Canada Limited Entrance Scholarship

Value \$500. Awarded annually to a student entering a full-time undergraduate program who has completed the Ontario Secondary School Honour Graduation Diploma (or its equivalent) and has demonstrated a high potential for university studies. Donor: Commonwealth Holiday Inns of Canada Limited. Established 1975.

W.H. Cramm Scholarship

Value \$100 approximately. Awarded annually to a male student of high proficiency entering Carleton University from Nepean High School, Ottawa. Donor: The late Jennie Shibley Cramm. Endowed 1967.

Jennie Shibley Cramm Scholarship

Value \$100 approximately. Awarded annually to a female student of high proficiency entering Carleton University from Nepean High School, Ottawa. Donor: The late Jennie Shibley Cramm. Endowed 1967.

Ottawa Citizen Scholarship in Journalism

Maximum value \$1,200. Awarded annually to a student entering First year of Journalism. The winner will receive \$300 a year until graduation provided the student is registered as a full-time student at Carleton University and maintains a satisfactory academic standing in the Journalism program. Donor: The Ottawa Citizen. Established 1969.

Association of Professional Engineers' Entrance Scholarship

Value \$500. Awarded annually to a student of high proficiency with senior matriculation standing who is entering the Engineering course. Donor: The Ontario Professional Engineers' Foundation for Education. Established 1961.

James H. Ratray Memorial Scholarship

Value \$500. Awarded annually to a student entering First year Engineering at Carleton University. Donor: The late James H. Ratray, M.C. Endowed 1961.

Blok-Lok Limited Scholarship

Value \$250. Awarded annually to a worthy student entering or enrolled in the School of Architecture. Donor: Blok-Lok Limited, Weston, Ontario. Established 1968.

D. Roy Campbell Scholarship

Value \$300. Awarded annually, under the terms of the will of the late D. Roy Campbell, for competition among students entering Carleton University with high standing in the senior matriculation examinations or the equivalent. Donor: The late D. Roy Campbell. Established 1962.

The ManuLife Scholarship in Commerce

Value \$1,000. Awarded annually to an outstanding student entering the Bachelor of Commerce program at Carleton University. Donor: The Manufacturers Life Ins. Co. Established 1976.

The Ford Motor Company of Canada Entrance Scholarship in Commerce

Value equivalent to tuition fee. Four scholarships awarded annually to outstanding students entering the School of Commerce at Carleton University in a full program of undergraduate studies. Donor: The Ford Motor Company of Canada. Established 1976.

The Ford Motor Company of Canada Entrance Scholarship in Engineering

Value equivalent to tuition fee. Four scholarships awarded annually to outstanding students entering the Faculty of Engineering at Carleton University in a full program of undergraduate studies. Donor: The Ford Motor Company of Canada. Established 1976.

The Hudson's Bay Scholarships

Value \$1,000 each. Three scholarships awarded annually to outstanding students from the Ottawa region entering the First year of Commerce at Carleton University. Donor: The Hudson's Bay Company. Established 1976.

Undergraduate In-Course Scholarships

Carleton University offers a number of scholarships, tenable at the University, to students continuing a full-time undergraduate program who have completed the equivalent of at least one year at the University and have demonstrated a high potential for university studies. These scholarships include:

1. the Senior Scholarships, named in honour of former senior officers of the University;
2. general In-Course Scholarships;
3. privately funded scholarships.

They are awarded on the basis of the academic standing attained by the candidate in his university studies. *Some of these scholarships are annual while others continue for not more than four years. To be eligible the candidate must have maintained a high academic standing and be registered in a full program of undergraduate courses during the Winter session (five courses in Science, Commerce, Arts, Social Sciences, Journalism; six courses in Engineering, Industrial Design, Architecture).*

Values:

Continuing scholarships: \$1,200, \$1,000 or \$700 for the First and succeeding years.

Annual scholarships: \$400.

Privately Funded Scholarships

Carleton University Academic Staff Association Scholarship

Value \$1,000. Awarded annually to a student of high proficiency proceeding from one year of course to another in undergraduate studies at Carleton University. Donor: Carleton University Academic Staff Association. Established 1977.

Carleton Alumni Association Scholarships

Scholarships totalling \$1,000 have been provided for undergraduates passing from one year of course to another at Carleton University with high standing. Certain of the scholarships are reserved for students in Honours. Donor: The Alumni Association of Carleton University.

Irene Gertrude Stitt Scholarship Fund

Scholarships totalling \$1,600. Awarded annually to students of high proficiency proceeding from one year of course to another at Carleton University. The fund has been made possible by a bequest of the late Edith May Stitt, in memory of her sister, Irene G. Stitt. Endowed 1966.

Ottawa Ladies' College Scholarships

Scholarships totalling \$4,000 have been provided by the University for annual competition among undergraduates for the various disciplines. Endowed 1967.

Francis C.C. Lynch Scholarships

Scholarships totalling \$6,000 have been provided for undergraduates passing from one year of course to another at Carleton University with high standing. Donor: The late Francis C.C. Lynch. Endowed 1967.

General Motors of Canada Limited Scholarships

Two scholarships valued at \$1,000 each. Awarded annually to outstanding undergraduate students who are proceeding from one year of course to another in Engineering, Economics, or Commerce at Carleton University. Recipients for this scholarship will be eligible for a continuing scholarship provided they maintain the status required by the University and have demonstrated a vocational interest in the sponsoring Company. Donor: General Motors of Canada Limited. Established 1975.

Jacob Freedman Scholarships

Scholarships totalling \$1,000 awarded annually to outstanding students who are proceeding from one year of course to another at Carleton University and St. Patrick's College. Donor: The late Jacob Freedman. Endowed 1967.

Gavin Scott Macfarlane Memorial Scholarship

Value \$300. Awarded annually to an outstanding student, preferably in Honours, who is proceeding from one year of course to another at Carleton University. First donated 1957, by Mrs. G.S. Macfarlane in memory of her husband, Lieutenant-Colonel Gavin Scott Macfarlane.

C.V. Hotson Memorial Scholarship

Value \$100. Awarded annually to an undergraduate student who maintains high academic standing and is active in student affairs. Donated by Carleton alumni and other friends in memory of Mr. Hotson, a 1950 Carleton Journalism graduate and former member of the Students' Council who returned to Carleton in 1953 to become administrative assistant to the president and executive secretary of the Alumni Association, a position he held until his death in October, 1960.

The Ottawa Women's Canadian Club Scholarship

Value: \$200 approximately. Awarded annually to an outstanding student who is proceeding from one year of course to another in the undergraduate Canadian Studies Program, St. Patrick's College. Endowed 1946. Revised 1977.

J. Lansing Rudd Scholarship

Value \$300 approximately. Awarded annually to a superior student progressing from one year of course to another at Carleton University. Donor: The late J. Lansing Rudd. Endowed 1967.

The Samuel L. Edelson Scholarship

Value \$250. Awarded annually to an outstanding student who is proceeding from one year of course to another at Carleton University. Donor: Members of the family. Established 1974.

James A. Gibson Scholarships

Scholarships totalling \$1,000 have been provided for superior students passing into the final year of the undergraduate course at Carleton University. The scholarships are named in honour of Dr. James A. Gibson, former Dean of Faculty of Arts and Deputy to the President of Carleton University. Donor: Carleton University.

Lord Dundonald Chapter (I.O.D.E.) Scholarship

Value \$150. Awarded annually to a student of superior standing and general proficiency, entering the final year of a degree course at Carleton University. Donor: Lord Dundonald Chapter, I.O.D.E. Established 1956.

J.P. Bickell Foundation Scholarships

The Trustees of the J.P. Bickell Foundation have established in the Department of Geology, Faculty of Science, scholarships for students entering the geological profession, of a possible value of \$1,500 each. The scholarships may be awarded on entrance into the Honours geological sequence at the First, Second or Third year levels at Carleton University. The scholarships are payable over two or three years depending on the entrance level. Three scholarships will be available for 1977-78. Full particulars may be obtained from the Awards Office.

The Jack Barwick and Douglas Duncan Memorial Scholarship for Art History

Value \$500 approximately. To be awarded annually to a student or students in the Department of Art History. The Chairman and faculty members of the Department of Art History are to decide each year on the most appropriate disbursement of the award. Donor: Mrs. J.P. Barwick. Established 1972.

The Jack Barwick and Douglas Duncan Memorial Scholarship for Music

Value \$500 approximately. To be awarded annually to a student or students in the Department of Music. The Chairman and faculty members of the Department of Music are to decide each year on the most appropriate disbursement of the award. Donor: Mrs. J.P. Barwick. Established 1972.

Morley E. Wilson Scholarship

Value \$500. Awarded annually to an outstanding student in Honours Geology who is proceeding from one year of course to another at Carleton University. Donor: The late M.E. Wilson, Sessional Lecturer in Geology at Carleton University, 1947-1953. Endowed 1975.

The Harry Kelman Memorial Scholarship

Value \$250. Awarded annually to an outstanding student in Second year or proceeding from Second to Third year and who is majoring in Art History at Carleton University. Donor: Friends of the late Mr. Harry Kelman. Established 1973.

Gordon J. Wood Scholarships in English

Value \$300 each. One to a full-time student in English proceeding from Second to Third year, who has taken at least three courses in English at Carleton; one to a full-time student in English proceeding from Third to

Fourth year, who has taken at least four courses in English at Carleton University. The assessment to be made on the basis of overall grades for the year, including Summer courses (if any) from the previous Summer. English marks will be given particular consideration if necessary in the ranking of qualifying students. Donor: Gordon J. Wood, Professor of English, Carleton University. Established 1974.

Wainwright Scholarships

Value \$400-\$1,200 depending on the academic standing of the candidates. Awarded annually, if merited, to outstanding students proceeding from one year of course to another in a degree program in History. Courses in Canadian History must form a substantial component of this program. Donor: Miss Dora I.I.S. Wainwright. Established 1974.

Clendinnen Scholarship in Biology

Value \$100. Awarded annually to an outstanding student proceeding from the Third to the Fourth year of the Honours course in Biology at Carleton University. Established 1951, in memory of Mr. and Mrs. T.E. Clendinnen, by their daughter.

Dr. Harry Katznelson Memorial Scholarship

Value approximately \$100. Awarded annually to an outstanding student proceeding into an advanced year in the Honours Biology program. Donor: Friends of the late Dr. Harry Katznelson, B.S.A., M.Sc., Ph.D., F.R.S.C., Director of the Microbiology Research Institute, Federal Department of Agriculture. Established 1965.

Clarence H. Hand Scholarship

Value \$200. Awarded annually to a student for excellence in studies in cryptogamic botany. Donor: Anonymous. Established: 1972, in honour of the late Clarence H. Hand, a skilled high school teacher and amateur bryologist.

BP Canada Scholarships

Two scholarships valued at \$500 each. Awarded annually, if merited, to outstanding students proceeding from one year of course to another in a degree program at Carleton University. Donor: BP Canada Limited. Established 1975.

The James and Jane Fraser Roy Scholarships

Value \$400 to \$1,200, depending on the academic standing of the candidates. Awarded annually, if merited, to outstanding students proceeding from one year of course to another in a degree program at Carleton University. Donor: The late Jean Roy. Established 1975.

Charles Anthony Blundell Betts Memorial Scholarship in Physics

Value approximately \$550. Awarded annually, if merited, to a student of high proficiency in Physics, entering or continuing in Physics Honours or in the Major course, in the Second or subsequent years of the degree course. Donors: Mr. and Mrs. Oliver Betts, Birmingham, England, in memory of their son, Charles Anthony Blundell Betts. Established 1964.

The Carling O'Keefe Scholarship

Value \$600. Awarded annually to an outstanding full-time student who is proceeding from one year of course to another at Carleton University. Donor: The O'Keefe Brewing Company Limited. Established 1972.

Mildred Susan Henry Scholarship

Value \$100. To be awarded annually to a student entering the Fourth year of the Honours program in the Faculty of Science. Endowed 1966 in memory of the late Mildred Susan Henry.

Janet M. Holmes Memorial Scholarship

Value \$300. Awarded annually, when merited, to a promising student proceeding from the Third to the Fourth year of the Honours Chemistry program at Carleton University. Candidates will be selected by the Department of Chemistry. Donors: Professor and Mrs. J.M. Holmes. Established July 1973.

L.N. Wadlin Scholarship in Mathematics

Value approximately \$225. Awarded annually to a student proceeding from one year to another at Carleton University who has shown excellence in the study of Mathematics. Donor: The late Lorenzo N. Wadlin. Endowed 1965.

Ian H. Griffith Memorial Scholarships

Value totalling \$1,000. Awarded annually, if merited, to outstanding students proceeding from one year of course to another in a degree program in the Faculty of Science, preferably in the Integrated Science Studies program, and having some appreciation of the humanities. Donors: Mr. and Mrs. J. Griffith in memory of their son Ian H. Griffith, B.Sc. Carleton 1976.

Thorne, Riddell & Company Scholarships

Two scholarships valued at \$400 and \$300 each. The scholarship of \$400 is awarded annually to the Third year Commerce student with the highest average marks. The scholarship of \$300 is awarded to the Third year Commerce student with the second highest average marks. (Formerly awarded as a scholarship by Arthur A. Crawley & Company, and as a bursary by Thorne, Gunn, Helliwell & Christenson). Donor: Thorne, Riddell & Company. Established 1969.

Canada Permanent Trust Company Scholarship

Value \$800. Awarded to a student entering the final year of his program in Commerce, who, in the opinion of the Director of the School in counsel, has demonstrated outstanding proficiency in his studies. Donor: The Canada Permanent Trust Company. Established 1975.

Touche, Ross & Company Scholarship

Value \$250. Awarded to a student who is proceeding from one year of course to another in the degree program in Commerce, and who intends upon graduation to study for the qualification of chartered accountant. The award will be made to the student whose character, ability, academic records, and other qualities are, in the opinion of the Committee on Commerce Studies, those needed by a chartered accountant. Preference will be given to a student with these qualifications who will be entering the final year of

course. Applications should be submitted to the Chairman of the Commerce Studies Committee before March 1. Donor: Touche, Ross & Company. Established 1962.

Xerox of Canada Limited Scholarship

Value \$1,000. Awarded to a student entering the final year of the degree course in Commerce. The sum of \$750 will be awarded to the recipient and \$250 for the unrestricted use of the School of Commerce. Should a post-graduate program be established in the School of Commerce at a later date this scholarship will be awarded as a fellowship in the course leading to the most advanced degree offered. Donor: Xerox of Canada Limited. Established 1970.

Victor S. Castledine Scholarship

Value \$500. Awarded annually to a student in Economics or Commerce who, in the opinion of the Chairman of the Department of Economics in counsel, has done outstanding work in the area of money, credit and banking studies. Donor: Victor S. Castledine, Esq. Established 1971.

Roderick C. McDonald Memorial Scholarship in Engineering

Value \$300. Awarded annually to an engineering student of high proficiency entering in the Fourth year of course. Established by the University in memory of the late Roderick C. McDonald, who before his death in 1961, was a member of the Faculty of Engineering.

Association of Professional Engineers' Scholarships

Value \$250 each. Three scholarships are awarded annually to Engineering students of high proficiency proceeding from one year of course to another in Carleton University. Donor: The Ontario Professional Engineers' Foundation for Education. Established 1961.

The Hawker Siddeley Canada Ltd. Engineering Scholarship

Value \$500. Awarded on the recommendation of the Faculty of Engineering to an outstanding student proceeding from the Third to the Fourth year in Electrical or Mechanical Engineering. Donor: Hawker Siddeley Canada Ltd. Established 1975.

Regent Vending Machines Limited Scholarships

Two scholarships valued at \$100 each. One scholarship is awarded annually to an outstanding student in Engineering proceeding from the First to Second year in the Engineering curriculum; and the second scholarship to such a student proceeding from the Second to the Third year of the curriculum. Donor: Regent Vending Machines, Limited. Established 1954.

Regent Vending Machines Limited Centennial Scholarship

One scholarship of \$150 awarded annually to an outstanding student in Engineering proceeding from Third to Fourth year. Donor: Regent Vending Machines Limited. Established 1967.

Regent Vending Machines Limited Anniversary Scholarship

Value \$100. Awarded annually to an outstanding student in Engineering proceeding from one year of course to another at Carleton University. Donor: Regent Vending Machines Limited to commemorate the 40th anniversary of the Company. Established 1972.

Vered Foundation Scholarships

Two scholarships valued at \$500 each; one awarded annually, if merited, to an Engineering student in Civil Engineering; the second scholarship awarded annually, if merited, to a student who is proceeding from one year of course to another in a degree program in Political Science. Donor: The Vered Foundation of Ottawa. Established 1975.

Hume Wrong Scholarship

Value approximately \$225. Established by Mrs. Hume Wrong in memory of her late husband. Awarded annually to the leading student in the Third year History or Political Science, proceeding to his or her final Honours year. Donor: The late Mrs. Hume Wrong. Endowed 1962.

National Press Club of Canada Scholarship in Journalism

A sum equal to tuition fees to be awarded annually to a student entering the final year of Journalism or News Photography course in a Canadian college or university. The name of one Carleton University student will be submitted annually to a selection panel of National Press Club members. Donor: The National Press Club of Canada. Established 1965.

John E. Bird Memorial Scholarship

Value approximately \$500. Awarded annually to an outstanding student who is proceeding from one year of course to another in a degree program in Journalism. Donor: Mrs. V. Bird. Established 1975.

CKOY Scholarship in Journalism

Value \$400. Awarded to a student who is proceeding from one year of course to another in the School of Journalism at Carleton University. Donor: CKOY Limited, Ottawa. Established 1973.

Union Carbide Canada Scholarship

Value \$500. To be awarded annually, when merited, to a student enrolled in the combined Journalism and Economics program who shows exceptional promise as a future reporter and interpreter of the Canadian business scene. The award normally will be given to a student proceeding from Third to Fourth year of the program. Donor: Union Carbide Canada Limited. Established 1976.

Lithwick, Lambert, Sim, Johnston, Moy Scholarship

Value \$300. Awarded annually to an outstanding student who has completed the Third year of course in the School of Architecture at Carleton University. Donors: Lithwick, Lambert, Sim, Johnston, Moy, Architects. Established 1968.

Cadillac Fairview Scholarship

Value \$500. Awarded annually to a student of superior standing in the School of Architecture at Carleton University. Donor: Cadillac Fairview Corporation. Established 1977.

The Page and Steele School of Architecture Scholarship

Value: \$300. Awarded annually to an outstanding student enrolled in the school of Architecture at Carleton University. Donor: Page and Steele Architects. Established 1967.

Undergraduate In-Course Scholarships for Part-Time Students

Carleton University offers a number of scholarships, tenable at the University, to students continuing in undergraduate studies who have completed the equivalent of at least five courses through part-time study beyond entrance requirements, at the University and have demonstrated a high potential for university studies. To be eligible the candidate must have maintained a high academic standing and be registered as a part-time student. Value: Academic tuition fee for one or more courses (non-transferable).

Wing Commander Guy Gibson V.C. Chapter, I.O.D.E. Scholarship

Value \$125. Awarded annually to a part-time student enrolled at Carleton University who has demonstrated a high potential for university studies. Donor: Wing Commander Guy Gibson Chapter, I.O.D.E. Established 1976.

University Women's Club of Ottawa Scholarships

Three scholarships valued at \$300 each. Awarded annually to women students at Carleton University to students continuing in undergraduate studies who have completed the equivalent of at least five courses beyond entrance requirements at the University and have demonstrated a high potential for university studies. To be eligible the candidate must have maintained a high academic standing and be registered as a part-time student. Donor: University Women's Club of Ottawa. First established in 1952 in honour of Dr. Alice E. Wilson.

Awards

The Sylvio Tiezzi Memorial Award

An award, consisting of the proceeds of a fund in trust in memory of the late Sylvio Tiezzi, an undergraduate at St. Patrick's College of the class of 1952. It is awarded to the Second year student at St. Patrick's College who has the best academic record for the year.

St. Patrick's College Alumni Awards

Value \$100 each. Awarded annually, if merited, on the recommendation of the Dean of the College, in conjunction with his Committee, to students entering an undergraduate program at St. Patrick's College. Donor: St. Patrick's College Alumni. Established 1975.

Henry Birks and Sons (Ontario) Limited Award

Value \$25. Awarded annually to a Carleton University student with a superior academic record who has contributed substantially to extracurricular activities. Donor: Henry Birks and Sons (Ontario) Limited. Established 1951.

Henry Marshall Tory Award

Presented annually to an outstanding graduating student who has shown a high degree of academic application, has indicated an interest in the University by broad participation in extracurricular activities of a constructive nature, has indicated qualities of leadership, and has attended Carleton University for at least three Winter sessions. Each candidate is nominated by three members of the Students' Association and selection is made by a committee composed of the President of the University, the Dean of Student Services, a member of the Faculty Board chosen by Senate and three students chosen by the Students' Council. The winner's name is inscribed on the master trophy and he receives a miniature replica. The award was established in 1950 by the Students' Council of Carleton University.

Clarkson, Gordon & Co. Award

Value \$100. Awarded annually to the student with the highest standing in the First year of the Commerce course. Donor: Clarkson, Gordon & Co. Established 1962.

D.F. McKechnie Award in Accounting

A book prize to be awarded, when merited, to a student in Commerce for proficiency in the study of accounting. Donor: D.F. McKechnie, C.A. Endowed 1951.

Lawrence Segal Memorial Fund

Value \$15. Established as a book prize for a student enrolled in the School of Commerce. Donors: The friends of the late Lawrence J. Segal, Bachelor of Commerce graduate, 1961, from Carleton University. Endowed 1970.

National Council of Jewish Women of Canada Award

Value \$100. Awarded on the recommendation of the Department of Religion to a student achieving high standing in the area of Judaic studies. Donor: National Council of Jewish Women of Canada, Ottawa Section. Established 1973.

Ann Smith Freedman Memorial Award

Value \$50. Awarded to the student in Psychology who has gained the highest standing in the experimental paper in Psychology 49.200 during the academic year.

Donors: Mr. and Mrs. Jarvis Freedman. Established 1958.

International House Award

Value \$200. To be awarded to a student attending Carleton University on a student visa in his graduating year, who, in addition to maintaining the academic levels of his degree program, has been an active participant in extracurricular activities in the University. Donor: International House. Endowed 1972.

Charles Pinhey Award

Awarded to a student entering the First year of Commerce at Carleton University from a secondary school in the Ottawa-Carleton Regional Municipality. The sum of \$300 will be awarded in the student's first year, and \$200 for each succeeding year provided the student is registered as a full-time student at Carleton University and maintains scholarship levels in the Commerce program. This award will be based on high academic performance and on financial need. Donor: The Ottawa Board of Trade. Established 1974.

Lilian I. Found Award for Poetry

Value \$25. Offered annually for the best lyric of fifty lines or less submitted by an undergraduate of Carleton University by March 15. Details may be obtained from the Department of English. Donor: The late Mrs. Lilian I. Found. Endowed 1950.

Marston Lafrance Memorial Awards in English

Value \$150. Awarded annually if merited on the recommendation of the Department of English to outstanding student(s) entering the Fourth year of the Honours English program at Carleton University. Established 1976 in memory of the late Dr. Marston Lafrance, former Dean of the Faculty of Arts, Division I.

Jayashree A. Nagpur Memorial Award

Value \$25. Awarded annually on the recommendation of the Department of English to an outstanding student in the English program at Carleton University. Donor: Anant L. Nagpur. Established 1976.

Wilgar Memorial Award in English

A book prize to be awarded to a Carleton University undergraduate who has shown excellence in essay-writing. Established 1951, in memory of the late W.P. Wilgar, assistant professor of English at Carleton University, 1948-50. Endowed 1952.

Roodman Award for Short Fiction

Value \$50. Awarded annually for the best piece of short fiction submitted by an undergraduate in the Department of English. Donors: Mr. and Mrs. Herman S. Roodman. Established 1965.

Mrs. George S. Abbott Memorial Award in Law

Value \$30. To be awarded annually for proficiency in law courses taken at Carleton University to a student planning to enter law school. Donor: Anonymous. Established 1968 in memory of Mrs. George S. Abbott

Herbert G. Heron Q.C. Award in Law

Value \$200 approximately. Awarded annually to a student in the Department of Law. Applicants and nominees for this award will be assessed by the Chairman of the Department of Law in conjunction with his Committee. Established 1975 in memory of Herbert G. Heron, Q.C.

Carswell Company Book Award in Public Law

Value \$50. Awarded annually to the student with the highest standing in a Public Law course. Donor: The Carswell Company Limited. Established 1965.

Mr. and Mrs. Louis L. Goldstein Book Award in Law

Awarded annually to a deserving Carleton University student majoring in Law on the recommendation of the Chairman of the Department. Donors: Mr. and Mrs. Louis L. Goldstein. Established 1975.

J. Carlisle Hanson Award

Value \$100. Awarded annually to an outstanding student proceeding into a combined Honours program in Law and History or Economics at Carleton University. Donor: J. Carlisle Hanson. Established 1973.

De Waan Foundation Award on Arab Problems

Each year for a period of five years from the first year of award, the De Waan Foundation offers a prize for work of appropriate scholarly level by a senior student on the problems of Arab countries. Annual value, \$100. Students wishing to prepare for this award should first consult the Director of the School of Public Administration. Donor: De Waan Foundation, 1960.

Journalism Writing Style Book Award

Value \$25. Awarded annually as a book prize to a Journalism 28.220 student, the writing style of whose class assignments shows exceptional merit. Donor: Anonymous. Established 1970.

Thomson Award for Reporting

Value \$300. Awarded annually to a student proceeding from Third to Fourth year Honours Journalism judged to be outstanding in reporting. Donor: Thomson Newspapers. Established 1970.

Blair Fraser Memorial Award for Journalism Graduates

Value \$125 approximately. Offered annually to a Journalism student in his graduating year who, in the opinion of a board of selection, shows a marked aptitude for and interest in political reporting at the national and international level. Endowed 1969, in memory of Blair Fraser, Ottawa editor of *Maclean's Magazine*, by a group of his friends.

Maclean-Hunter Award in Journalism

Value \$1,000. Awarded annually to a student entering the one-year program in Journalism for university graduates mainly on the basis of previous academic performance. Donor: Maclean-Hunter Publishing Company Limited. Established 1967.

Kingston Whig-Standard Award in Reporting

Value \$250. Awarded annually to the Journalism student in any reporting course for the story judged the best single assignment turned in. Donor: Kingston Whig-Standard. Established 1970.

Kenneth R. Wilson Memorial Award for Journalism Graduates

Value about \$300. Offered annually to a student graduating in Journalism who, in the opinion of a board of selection, shows exceptional promise as a future reporter and interpreter of Canadian affairs. Endowed 1953, in memory of Kenneth R. Wilson, Ottawa Editor of *The Financial Post*, by a group of his personal friends.

Wilfrid Eggleston Award in Journalism

Value \$300. Awarded to the undergraduate with the best record in the Second year Journalism degree program. This award is named in honour of Professor Emeritus Dr. Wilfrid Eggleston, former Director of the School of Journalism. Donor: Anonymous. Established 1967.

The Rachael Elizabeth Edwards Memorial Award

Value \$200. Presented annually on the recommendation of the School of Journalism to an outstanding student who is graduating in the School of Journalism one-year degree program. Preference will be given to a female student who has indicated an interest in pursuing a career in the daily newspaper field. Endowed 1974. In memory of Rachael Elizabeth Edwards, a former student in the School of Journalism.

BMI Canada Limited Award

Value \$50. Awarded annually on the recommendation of the Department of Music, to a student who has demonstrated aptitude in music composition. Donor: BMI Canada Limited. Established 1974.

Chemical Institute of Canada Award

Value \$25. Awarded as a book prize to the best student proceeding to the final year of the course leading to the degree of Bachelor of Science with Honours in Chemistry. Donor: The Chemical Institute of Canada. Established 1950.

Society of Chemical Industry Award

A gold key with the crest of the Society of Chemical Industry in front and the name of the winner, course, year and university on back is granted to the student who has the highest standing in the final year of the Honours course in Chemistry. Winner will also receive a year's subscription to the Journal, *Chemistry and Industry*. Donor: Canadian Section, Society of Chemical Industry. Established 1961.

Dr. M. Ralph Berke Award in Chemistry

The yield of a \$500 fund is awarded each year, if merited, on the recommendation of the Department of Chemistry for a prize to be awarded to an outstanding student majoring in Chemistry proceeding from the Second to the Third year of the degree course. Donor: Dr. M. Ralph Berke. Established 1956.

Catherine Daumery Memorial Award for Botanical Collection

Value \$50, together with a book prize. Awarded annually, if merited, on the recommendation of the Department of Biology, to a student who has submitted, by November 1, an outstanding collection of mounted and identified flowering plants. Donor: Anonymous. Established 1953.

Elizabeth White Memorial Award for Zoological Collection

Value \$50, together with a book prize. Awarded annually, if merited, on the recommendation of the Department of Biology, to a student who has submitted, by November 1, an outstanding collection of insects or arachnids, properly preserved and identified. Donor: Anonymous. Established 1953.

V.A. Ewing Memorial Award

Value \$100. Awarded annually, if merited, on the recommendation of the Department of Biology to a student entering his graduating year in Honours Biology who has shown outstanding application and promise in his laboratory work in experimental and descriptive Biology. Donor: Anonymous.

Betty Nesbitt Memorial Award in Biology

Awarded annually to a student entering the Third year of a Bachelor's degree program in Biology, who, in the opinion of the Department has shown exceptional promise in the field of Biology. Preference will be given to a student in a faculty other than the Faculty of Science. Donors: Friends of the late Mrs. H.H.J. Nesbitt. Established 1976.

Award of the Canadian Institute of Mining and Metallurgy (Ottawa Branch)

Value \$500. The cash prize mentioned is available annually for an essay submitted by full-time undergraduate students at Carleton University and University of Ottawa only. This cash prize is for the best essay on a subject appropriate to any one of the Institute technical divisions, namely the Coal Division, the Geology Division, the Industrial Minerals Division, the Mechanical/Electrical Division, the Metallurgical Society, the Metal Mining Division and the Petroleum Society of CIM. For the purpose of this competition, an undergraduate student may be one who is registered in a Second, Third or Fourth year of an undergraduate program at the time he submits his essay. Essays will have to be submitted to the Chairman of the Geology Department of Carleton or University of Ottawa on or before December 31 of each year. Essays need not be papers prepared exclusively for this competition. They

may incorporate in part or entirely other papers presented by students as academic exercises. The use of field data or field observations collected by the student himself during Summer employment is recommended. Established 1956 and 1974.

American Society for Metals Award in Engineering

Value \$50. Awarded annually to a student with high standing in the First year of the Engineering course. Donor: Ottawa Valley Chapter, American Society for Metals. Established 1951.

Wild Leitz Canada Limited Award in Engineering

A set of stainless steel drawing instruments is awarded annually to a student in First year Engineering at Carleton University judged most worthy of the award by the Faculty of Engineering. Donor: Wild Leitz Canada Limited. Established 1960.

Systems Management Award

Value \$50. Awarded annually, if merited, for the best Fourth year Engineering project (99.497) in the area of systems analysis. Donor: Association for Systems Management Ottawa Valley Chapter. Established 1975.

James E. Whenham Award

Value \$200. Awarded annually to a student of superior standing enrolled in the School of Architecture, Carleton University. Donor: James E. Whenham. Established 1968.

Ontario Association of Architects Awards

Value \$500. Awarded annually to a deserving student enrolled in the Second year in the School of Architecture an award of \$250, and to a deserving student enrolled in the Third year of the School of Architecture an award of \$250. Donor: Ontario Association of Architects. Established 1972.

Audrey Stankiewicz Design Award

Value \$500. This award has been made available to a Third or Fourth year student in the School of Architecture once every two years commencing in February, 1971. The award is made to honour the memory of the late Audrey Stankiewicz who had a continuing critical interest in product, visual and industrial design and architecture. Donor: Mr. Z. Matthew Stankiewicz. Established 1970.

Department of Mathematics Entrance Award

Value \$300 minimum. One or more annual awards for a student or students entering the First year of an Honours or Major Program in Mathematics at Carleton University. The selection of the recipient or recipients will be based on an annual Mathematics competition for high school students with the decision being recommended by the Chairman of the Department of Mathematics in consultation with the Awards Officer and the Department's High School Liaison Committee. Donor: Members of the faculty in the Department of Mathematics. Established 1973.

Richard J. Semple Memorial Award in Mathematics

Value to be announced: Awarded annually to an outstanding student enrolled in an Honours Mathematics program and proceeding to Third or Fourth year of studies at Carleton University. Donors: Friends and family of the late Richard J. Semple. Established 1977 in memory of Richard J. Semple, a long-time faculty member of the Department of Mathematics.

Awards of the Ambassador of Switzerland to Canada

For excellence in the study of French, German, and Italian, book awards are offered annually by the Ambassador of Switzerland to Canada. Established 1953.

Awards of the Embassy of the Federal Republic of Germany

For excellence in the study of German, book awards are offered annually by the Embassy of the Federal Republic of Germany in Canada. Established 1955.

Award of the Embassy of Austria

For excellence in the study of German, a book award is offered annually by the Austrian Embassy in Canada. Established 1960.

Award of the Embassy of Italy

For excellence in the study of Italian, a book award is offered annually by the Embassy of Italy in Canada. Established 1971.

Award of the Embassy of Spain

For excellence in the study of Spanish, a book award is offered annually by the Spanish Embassy in Canada. Established 1960.

Awards of the Embassy of the Union of Soviet Socialist Republics

For excellence in the study of Russian, awards are offered annually by the Embassy of the Union of Soviet Socialist Republics. Established 1963.

Award of the Ambassador of the United States of America

A book award is offered annually by the American Ambassador to Canada to a graduating student who has distinguished himself in the fields of United States history, economics, or political science. Established 1968.

Award of the High Commission of India

For excellence in the study of Sanskrit, a book award is offered annually by the High Commission of India. Established: 1976.

Award of the Government of Quebec for excellence in the Study of French

A book award is offered annually by the Minister of Cultural Affairs of the Province of Quebec. Established 1968.

Bursaries

University General Bursary Fund

The fund is to provide bursaries in aid of students with satisfactory academic standing who, in the First or subsequent course-years, are in need of financial assistance. Established by the University in 1954.

Knights of Pythias, Aurora Lodge No. 53 Bursary

Value \$100. Awarded to a good student, progressing from one year of course to another, who needs financial assistance to continue his or her studies. Donor: Knights of Pythias, Aurora Lodge No. 53. Established 1960.

Maurice Frederick Carty Bursary

Value \$300. Awarded annually to a student in course who would not otherwise be able to proceed without delay to a higher year within the University. Donor: Mrs. E.G. Carty, in memory of her son, Maurice Frederick Carty. Established 1957.

Phillips Bursary

Value approximately \$200, the annual yield of a fund of \$5,000 made available to Carleton University by Miss L.A. Phillips. The bursary is to be awarded each year to a student with good academic standing who is in need of financial assistance. Endowed 1962.

IBM-Canada Bursary Program

Value \$1,000 annually. To provide bursaries to undergraduate students registered in a full-time course at the university who have satisfactory standing and who demonstrate financial need. Application may be made through the Awards Office. Donor: International Business Machines Company Limited. Established 1963.

Honourable Cairine Wilson Bursary

Value \$300. Awarded annually to a good student entering Carleton University or proceeding from one year of course to another and requiring financial assistance to complete his or her studies. The bursary has been made possible by a bequest of the Honourable Cairine Wilson, first woman member of the Canadian Senate. Endowed 1962.

Patricia Larmonth Memorial Bursary

Value \$100. Awarded annually to a deserving student enrolled at Carleton University and who is in need of financial assistance. Donor: Ottawa Women's Canadian Club. Established 1971.

A. Andras Memorial Bursary

Value \$250. Awarded annually to an undergraduate student attending Carleton University, who is in need of financial assistance and whose parent is a member of a trade union which is affiliated to the Canadian Labor Congress. Established 1972, in memory of the late Mr. A. Andras who was a member of Carleton's Board of Governors.

The Mary C. Grant Bursary (Laurentian Chapter, I.O.D.E.)

Value \$600. Awarded annually to a particularly able student entering Carleton University or proceeding from one year of course to another, and requiring financial assistance to complete his or her studies. The bursary has been established in honour of Mary C. Grant. Donor: The Laurentian Chapter, I.O.D.E. Established 1962.

Nathan Braham Bursary

Value \$200-\$250. Awarded annually to an entering or returning student, with superior academic standing who is in need of financial assistance. The bursary has been made possible by a bequest of Mr. Nathan Braham. Endowed 1964.

Ormond M. Stitt Bursary Fund

To provide bursaries for deserving students in need of financial assistance. The fund has been made possible by a bequest of the late Miss Edith May Stitt, in memory of her brother, Ormond M. Stitt. Endowed 1966.

Friends of Carleton Bursary Fund

A sum to provide bursaries for deserving students in need of financial assistance. This fund has been made possible by contributions from the Friends of Carleton University. Established 1967.

Abraham and Mary Shaffer Bursary

Value \$250. Awarded annually to a good student entering Carleton University or proceeding from one year of course to another, and requiring financial assistance to complete his or her studies. Donor: The late Abraham Shaffer. Endowed 1967.

Beta Sigma Phi Sorority Bursary

Value \$250. To be awarded to a deserving female student majoring in English. Donor: The City Council of Beta Sigma Phi Sorority. Established 1964.

Isabella Ellen Taylor Memorial Bursary Fund

Value \$1,000 annually. To provide bursaries to undergraduates in any year of course who are in need of financial assistance and have good academic standing. Donor: The late Daisy Elizabeth Taylor. Endowed 1969.

Donald William Buchanan Bursary

Value \$250. Awarded annually to a student entering or progressing from one academic year to another, and who is in need of, and deserving of, assistance to continue studies as a full-time student. Donor: The late Donald William Buchanan. Endowed 1967.

Carleton University Faculty Wives Association Bursary

Value \$250. Awarded to a student in good academic standing and in financial need, who is proceeding from First to Second year of studies at Carleton University. Donor: Carleton University Faculty Wives Association. Established 1977.

Carleton University Academic Staff Association Bursaries

Two bursaries valued at \$235 each. Awarded annually to full-time students proceeding from one year of course

to another and requiring financial assistance. Donor: Carleton University Academic Staff Association. Established 1977.

Gretta Boyd Memorial Bursary

Value \$100. First awarded in 1969-70 to an undergraduate student in any year or faculty with good academic standing and in need of financial assistance. Donor: Kiwanis Club of City View. Established 1969 in memory of the late Gretta Boyd.

ATA Trucking Industry Educational Foundation Bursary Fund

To provide bursaries for First or Second year students who, due to extenuating circumstances, are deserving of financial assistance, and without such assistance would be unable to continue their studies. Donor: ATA Trucking Industry Educational Foundation Inc. Established 1959.

C.A. Fitzsimmons and Company Limited Bursary

Value \$100. Awarded annually to a competent student entering Carleton University who, without financial assistance, could not continue his or her formal education. Donor: C.A. Fitzsimmons and Company Limited, Ottawa. Established 1960.

National Printers Limited Bursary

Value \$250. Awarded annually to an undergraduate student who has completed at least one academic year at Carleton University, and who is in need of financial assistance. Donor: National Printers Limited, Ottawa. Established 1965.

J. Lansing Rudd Bursary

Value \$225. Awarded annually to a good student progressing from one year of course to another who needs financial assistance to continue his or her studies. Donor: The late J. Lansing Rudd. Endowed 1967.

Atkinson Charitable Foundation Bursary Fund

Value to be announced. Awarded to assist students of Carleton University. Terms of award are as follows: (1) In addition to scholastic merit and financial need, goal and promise will be considered in selecting recipients. (2) Candidates must be residents of Ontario. (3) An applicant must have completed at least one academic year and be enrolled as a full-time undergraduate in any course at Carleton University. (4) For one of the awards, preference will be given to candidates intending later to pursue studies in Theology. Donor: The Atkinson Charitable Foundation. Offered for the first time in 1951, as an experiment in the provision of financial aid to students.

R.A. Beamish Bursary

Value approximately \$400. Awarded annually to a student entering or progressing from one academic year to another who, without financial assistance, could not continue his or her formal education. To be eligible, an applicant must be a resident of one of the eleven eastern counties of Ontario (Renfrew, Frontenac,

Lanark, Leeds, Carleton, Grenville, Russell, Dundas, Prescott, Glengarry, Stormont). Donor: The R.A. Bea-mish Foundation. Endowed 1951.

SDL Bursaries

Value \$1,000 annually. To provide four bursaries valued at \$250 each awarded to students with good academic standing and who are in need of financial assistance. Donor: Systems Dimensions Limited. Established 1975.

J.P. Bickell Foundation Bursary Fund

Value to be announced. The Trustees of the J.P. Bickell Foundation have established bursaries in the Faculty of Science. An applicant must be taking a normal sequence of courses leading to a degree in Geology and must have competent academic standing. Carleton students may obtain full details of the bursary from the Awards Office. Donor: J.P. Bickell Foundation, Toronto. Established 1956.

James H. Rattray Bursary Fund

Value \$500 approximately, to provide bursaries for students in Science and Engineering, with certain areas of preference. Donor: The late James H. Rattray, M.C. Endowed 1961.

Edward Godfrey Carty Bursary

Value \$300. Awarded annually to a student in course, specifically in Engineering, who would not otherwise be able to proceed without delay to a higher year within the University. Donor: Mrs. E.G. Carty, in memory of her husband, Edward Godfrey Carty. Established 1964.

Engineers' Wives Association Bursary

Value \$600. Awarded annually to deserving students enrolled in the Faculty of Engineering. Donor: Engineers' Wives Association of Ottawa. Established 1959.

Litton Systems (Canada) Limited Bursaries

Two bursaries valued at \$150 each. Awarded annually to students with good academic standing, enrolled in the Faculty of Engineering, and who are in need of financial assistance. Preference will be given to those students who plan to major in Electrical or Mechanical Engineering. Donor: Litton Systems (Canada) Limited. Established 1967.

Ottawa Superfluity Shop Bursaries

An annual sum of approximately \$200 is available to provide bursaries for veterans of World War I or World War II, or for the descendants of such veterans, who are students in good standing at Carleton University and in need of financial assistance. Endowed 1947.

Ottawa Citizens' War Services Committee Bursary

An annual sum of approximately \$100 is available to assist veterans, their dependents or descendants, who are students in good standing at Carleton University and are in need of financial assistance. Endowed 1948.

Royal Canadian Legion Ottawa-Eastview Poppy Fund Awards

Awards, consistent with financial need but not normally over \$400, are offered to sons and daughters of veterans resident for at least one year in the Ottawa area. Application forms may be obtained from the Awards Office, Carleton University, or from Ottawa-Eastview Poppy Fund H.Q. 542A Wellington St., Ottawa, K1R 6K5. (telephone 233-4810). Applicants will be called for an interview the first week of September to review the financial circumstances of the student and family in relation to the academic program for which the student has been accepted.

Corporation House Limited Bursary

Value \$250. To be awarded annually to a good student in need of financial assistance, who is, in addition, a son or daughter of a parent employed in the public service of Canada, or in a federal corporation or agency, or serving in the Armed Forces of Canada. Donor: Corporation House Limited. Established 1962.

Birks Family Foundation Bursaries

The Birks Family Foundation has established a plan of annual contributions to the Student Aid Fund of recognized Canadian universities and colleges for the creation of the Birks Family Foundation Bursaries. The bursaries are awarded by the Foundation on the recommendation of the University Scholarship Committee and are not restricted to faculty or year and may be renewed. The number and amount of such awards may vary annually, depending upon the funds available for the purpose from the Foundation.

Father John Bransby Zachary Memorial Fund

To provide bursaries for students enrolled in St. Patrick's College who are in need of financial assistance. Endowed 1974 by friends and students of St. Patrick's College; this award is named in honour of the late John Bransby Zachary, Registrar of St. Patrick's College from 1961 until his death April 28, 1973.

Nurse "Bill" Bayley Memorial Fund

The fund is to provide for assistance in emergencies for students requiring dental and medical care. Endowed 1974 by friends and students; this award is named in honour of the late Kathleen Bayley, a member of the Counselling and Health Services from 1965 to the time of her death June 7, 1973.

Research Grant Funds

The A. Andras Memorial Grant

An annual grant of approximately \$350 to support the cost of a research project or paper undertaken by an undergraduate or graduate student attending Carleton University in one of the following areas: (1) trade union history or current activities of trade unions in Canada; (2) the history or activities of the Democratic Socialist movement in Canada; (3) a study related to social or cultural activities of Jewish immigrants in Canada since the beginning of the twentieth century. Established 1972 in memory of the late Mr. A. Andras, a member of Carleton's Board of Governors.

Loan Funds

John Parker Loan Fund

To provide loans not exceeding \$600 each to students who have completed at least one successful year at Carleton University and who are not eligible to receive assistance from other sources of financial aid. Inquiries for application forms are available to students following interviews with the Awards Officer.

Further information regarding existing sources of scholarships, awards, bursaries and loans may be had from the Awards Office, telephone 231-3735.

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M.J. McGuire, B.Sc. (British Columbia)
Senior Demonstrator in Chemistry

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*Sessional Lecturer in Economics**

B.A. McIntosh, M.Sc. (Western Ontario)
*Senior Demonstrator in Physics**

S. McLean, B.A. (Carleton) LL.B., M.A. (Windsor)
*Sessional Lecturer in Law**

J. McNeill, B.Sc., Ph.D. (Edinburgh)
*Adjunct Professor in Biology**

S. Merkley, B.A. (Carleton)
*Sessional Lecturer in Geography**

J. Mills, B.A., M.A. (Manitoba) M.A. (Yale)
*Sessional Lecturer in Economics**

Inara Moeser, B.A. (Carleton) M.A. (Toronto)
*Sessional Lecturer in German**

Carl Mollins, B.A. (Toronto)
*Sessional Lecturer in Journalism**

R.K. Moores, B.A. (Sir George Williams) M.A. (New School for Social Research)
*Sessional Lecturer in Economics, St. Patrick's College**

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Senior Demonstrator in Chemistry

R. Morrow, B.A. (Loyola) M.A. (Queen's) LL.B. (Ottawa), of the Bar of Ontario
*Sessional Lecturer in Law**

D.A. Muise, B.A. (St. Francis Xavier) M.A. (Carleton) Ph.D. (Western Ontario)
*Sessional Lecturer in History**

J.B. Murray, M.B.A. (Western Ontario)
*Sessional Lecturer in Accounting**

S. Murray, B.A. (Carleton)
*Sessional Lecturer in Law**

P. Nador, Dipl.Eng. (Technical University of Budapest) M.Eng. (McGill)
*Adjunct Professor in Engineering**

B.N. Nandi, B.Sc., M.Sc. (Calcutta) Dr.-Ing. (West Germany)
*Sessional Lecturer in Geology**

S.A. Narang, B.Sc., M.Sc. (Punjab) Ph.D. (Calcutta)
*Adjunct Professor in Chemistry**

J.A. Nason, M.B.A. (Dalhousie)
*Sessional Lecturer in Accounting**

H.A. Newman, B.A., LL.B. (Dalhousie)
*Sessional Lecturer in Law**

D.R. Oliver, B.A., M.A. (Saskatchewan) Ph.D. (McGill)
*Adjunct Professor in Biology**

W. Outerbridge, B.A. (McMaster) B.S.W., M.S.W. (Toronto) M.Crim. (Berkeley)
*Sessional Lecturer in Sociology, St. Patrick's College**

R.E. Overstreet, Ph.D. (Purdue)
*Sessional Lecturer in Management Studies**

C. Parent, D.P.A., M.A. (Carleton)
*Sessional Lecturer in Economics**

R.A. Parson, B. Eng. (Carleton)
*Sessional Lecturer in Engineering**

R. Pearmain, M.B.A. (Wharton)
*Sessional Lecturer in Accounting**

D. Peters, B.Sc., Ph.D. (St. Andrews)
*Adjunct Professor in Psychology**

D. Pharand, B.A., LL.B. (Dalhousie) LL.M. (Michigan) LL.D. (Paris) 'S.J.D. (Michigan) Dipl. International Law (Hague Academy)
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*Sessional Lecturer in German**

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*Sessional Lecturer in Law**

Ross Pratt, L.R.S.M., L.R.A.M., F.R.A.M. (London) A.T.C.M. (Toronto)
*Sessional Lecturer in Music**

J.K. Prokaska, B.Sc. (Manitoba) C.A.
*Sessional Lecturer in Accounting**

I.E. Puddington, B.Sc. (Mount Allison) M.Sc., Ph.D. (McGill)
*Adjunct Professor in Chemistry**

Mina Pun, B.Sc., M.Sc. (British Columbia)
*Senior Demonstrator in Chemistry**

S. Raby, B.A., M.Sc., Ph.D. (Wales)
*Sessional Lecturer in Geography**

R.O. Ramseier, B.Sc. (Burgdorf) M.Sc. (Dartmouth)
*Sessional Lecturer in Geography and Geology**

D.J. Rebin, B.A. (Saskatchewan)
*Demonstrator in Physics**

P. Revesz, Ph.D. (Budapest)
*Adjunct Professor in Mathematics**

Susan Richer, B.Sc. (State University of New York)
 M.A. (Rochester)
*Sessional Lecturer in Social Sciences**

Caroline Rideout-Stewart, B.A., M.A. (McGill)
*Sessional Lecturer in Sociology and Anthropology**

C. Rioux, B.A., M.A. (Carleton)
*Sessional Lecturer in Architecture**

H.A. Robertson, B.Sc., Ph.D. (Edinburgh) F.R.I.C.,
 F.R.S.
*Adjunct Professor and Sessional Lecturer in Biology**

G. Robichon, B.A., LL.B. (Ottawa) LL.M. (London), of
 the Bar of Ontario
*Sessional Lecturer in Law**

T. Rochefort, M.B.A. (York)
*Sessional Lecturer in Management Studies**

P. Rock, B.Com. (St. Patrick's) LL.B. (Ottawa)
*Sessional Lecturer in Economics**

J.D. Rodger, B.Eng. (Carleton)
*Demonstrator in Engineering**

E. Rolfe, B.Sc. (London)
*Senior Demonstrator in Physics**

J.J. Rooney, B.Com. (British Columbia) C.A.
*Sessional Lecturer in Accounting**

I. Rootman, B.A. (Alberta) M.Phil., Ph.D. (Yale)
*Adjunct Professor in Psychology**

R.L. Rosenberg, Ph.D. (Cape Town)
*Sessional Lecturer in Mathematics**

Graham Rowley, B.A., M.A. (Cambridge) LL.D. (Sask-
 atchewan)
*Sessional Lecturer in Anthropology**

A. Salmon, B.Sc. (Carleton)
Demonstrator in Physics

D.F. Sangster, B.Sc., M.Sc. (McGill) Ph.D. (British
 Columbia)
*Adjunct Professor in Geology**

P.W.R. Sargeant, B.Sc. (Carleton)
*Senior Demonstrator in Physics**

D.C. Savage, B.A. (McGill) Ph.D. (London)
*Sessional Lecturer in History**

Helmut Schade, C.P.S.S. (Carleton)
*Sessional Lecturer in Journalism**

T. Schatteles, M.A. (Bucharest) Ph.D. (Romanian
 Academy)
*Sessional Lecturer in Economics**

Ann Schau, B.Sc. (British Columbia) B. Mus. (Carleton)
*Sessional Lecturer in Music**

Thomas J. Scheff, B.S. (Arizona) M.A., Ph.D. (Berkeley)
Visiting Professor in Sociology and Anthropology

G.M. Scott, M.A. (Edinburgh)
Sessional Lecturer and Slide Curator in Art History

B. Searle, B.A.Sc. (British Columbia) M.Eng. (Carleton)
*Sessional Lecturer in Engineering**

M. Sheikh, Ph.D. (Western Ontario)
*Sessional Lecturer in Economics**

H.M. Simpson, B.A., M.A. (British Columbia) Ph.D.
 (Western Ontario)
*Adjunct Professor in Psychology**

G.F. Singer, B.A. (Loyola) M.Environmental Studies
 (York)
*Sessional Lecturer in Industrial Design**

A.J. Smialowski, Dip.Ing. (Lwow) P.Eng.
*Sessional Lecturer in Engineering**

A. Smith, B.Sc., M.Sc., Ph.D. (McGill)
*Research Associate in Psychology**

I.C.P. Smith, B.Sc., M.Sc. (Manitoba) Ph.D. (Corpus
 Christi)
*Adjunct Professor in Chemistry**

J.H. Smith, B.B.A. (Acadia) C.A.
*Sessional Lecturer in Accounting**

Anne Squire, B.A., M.A. (Carleton)
*Sessional Lecturer in Religion**

A.D. Stanley, M.Sc., Ph.D. (British Columbia)
*Sessional Lecturer in Geography and Geology**

R.W. Stemp, B.A.Sc. (Toronto)
*Sessional Lecturer in Geology**

- M. Stiles, B. Arch. (Sidney)
*Sessional Lecturer in Architecture**
- C.D. Stothart, B.Sc. (New Brunswick)
*Sessional Lecturer in Engineering**
- John Struyk, B.A. (Calvin) M.A., Ph.D. (Waterloo)
*Sessional Lecturer in German**
- K.W. Studnicki-Gizbert, B.Sc., M.Sc. (London) Ph.D. (McGill)
*Adjunct Professor in Engineering**
- Bharathy Sundaresan, B.A. (Delhi) M.A. (Carleton)
*Sessional Lecturer in Religion**
- D. Sutherland, B.Sc. (Carleton)
*Sessional Lecturer in Engineering**
- G.D. Taylor, B.A., M.A. (British Columbia)
*Sessional Lecturer in Geography**
- R. Thiesburger, B.A. (Wilfrid Laurier) C.A.
*Sessional Lecturer in Accounting**
- A.R. Thomas, B.Com. (Toronto) C.A.
*Special Lecturer in Accounting**
- D.A. Thomas, B.Eng. (Carleton)
*Special Lecturer in Economics and Management Studies**
- T. Thomas, B.S. (John Carroll) M.A. (McGill) Ph.D. (Cambridge)
*Sessional Lecturer in Economics**
- W. Throop, B.A., M.A. (Carleton) M.Sc. (Carnegie-Mellon)
*Sessional Lecturer in Architecture**
- Sonia Tilson, M.A., Dipl.Ed., Ph.D. (Wales)
*Sessional Lecturer in English**
- G.C. Topp, B.S.A., M.S., Ph.D. (Wisconsin)
*Adjunct Professor in Geography**
- Jean Trevelyan, F.R.C.O., L.R.A.M., A.R.C.M. (London)
*Sessional Lecturer in Music**
- R. Trites, B.A. (Gonzaga) M.A., Ph.D. (Ottawa)
*Adjunct Professor in Psychology**
- Zipporah Vardi, Teachers' College (Israel)
*Sessional Lecturer in Religion**
- H.V. Walker, B.Sc., M.Sc. (British Columbia) Ph.D. (Manitoba)
*Sessional Lecturer in Economics**
- R.G. Warnock, B.A.Sc. (Illinois) M.A.Sc., Ph.D. (Iowa)
*Sessional Lecturer in Engineering**
- E. Watt, B.Sc. (Carleton)
*Laboratory Co-ordinator in Biology**
- J. Wegner, B.A. (Indiana) M.Sc. (Carleton)
*Laboratory Co-ordinator in Biology**
- K. Weiss, B.A. (Carleton)
*Sessional Lecturer in Engineering**
- M.H. Wershof, Q.C., B.A., LL.B., LL.D. (Alberta), of the Bar of Alberta
Adjunct Professor of Law and International Affairs
- Mary Wilson, M.A. (Carleton)
*Sessional Lecturer in English**
- D.M. Wood, M.A. (Toronto) Ph.D. (McMaster)
*Adjunct Professor in Biology**
- Janet Wood, B.Sc. (Victoria) Ph.D. (Edinburgh)
*Sessional Lecturer in Biochemistry**
- D. Wren, M.R.A.I.C.
*Sessional Lecturer in Architecture**
- E.W. Wright, B.A.Sc. (Toronto) M.Sc., Ph.D. (Illinois)
*Adjunct Professor in Engineering**
- Anna Wurtele, M.A. (McGill)
*Sessional Lecturer in English**
- Bruce Yemen, B.A., B.J. (Carleton)
*Sessional Lecturer in Journalism**

Calendar of Milestones

The Institution

1942

Ottawa Association for the Advancement of Learning established to develop Carleton College. At first the College offered only evening classes in introductory university subjects, with some courses in Public Administration.

1943

Ottawa Association for the Advancement of Learning incorporated.

1945

Beginning of day classes and full-time teaching. Establishment of the Faculty of Arts and Science, including courses in Journalism, and First year Engineering.

1946

Move from rented premises to the First Avenue campus, formerly Ottawa Ladies' College. First degrees awarded, three in Journalism and three in Public Administration.

1947

The College committed itself to complete Major and Honours courses, the Third year of the program being offered for the first time in 1947-48, the Fourth year in 1948-49, and the Fifth (Honours) year in 1949-50.

1949

First degrees in Arts, Science, and Commerce awarded. Formation of Senate.

1950

First Honours degrees in Arts and Science awarded.

1952

The Carleton College Act 1952 passed by the Ontario Legislature. This changed the corporate name to Carleton College. It also confirmed the power to grant degrees.

1952-53

Property for new campus acquired, on the site between the Rideau River and the Rideau Canal.

1953

Establishment of the School of Public Administration.

1954

Appointment of Architectural Associates for Carleton to prepare first master plan and to design first group of buildings. First honorary degree of LL.D. conferred on Dag Hammarskjöld, Secretary-General of the United Nations.

1955

First Master's degree awarded.

1957

The Carleton University Act, 1957. Establishment of the School of Engineering. Establishment of the Institute of Canadian Studies.

1959

Move to Rideau River campus, following construction of the Henry Marshall Tory Building (Science), the Maxwell MacOdrum Library, and Norman Paterson Hall (Arts).

1961

First degrees in Engineering awarded. First Ph.D. degree awarded.

1962

Students accommodated in residences on campus for the first time.

1963

Reorganization into Faculties of Arts, Engineering, Science, and Graduate Studies. Committee on Soviet and East European Studies established.

1966

Establishment of the School of International Affairs. Establishment of the School of Commerce. Comparative Literature Committee established.

1967

Integration of St. Patrick's College as a division of the Faculty of Arts. School of Social Work became part of the Faculty of Arts.

1968

Establishment of the School of Architecture. New University Government established with student representatives at all levels of the University system from Department to Board of Governors. First year of the academic exchange agreement between Carleton and the University of Leningrad.

1969

Free Choice First year initiated for the Faculty of Arts. Linguistics Committee established.

1970

Agreement completed between Carleton and University of Ottawa to accept "visiting students" at the graduate level. Biochemistry degree program initiated.

1971

Unified Liberal Arts Program established for St. Patrick's College. General Science Degree Program established with Environmental Studies program available.

1972

School of Social Work is accommodated on the Rideau River campus. A new one-year French program is offered at St. Patrick's College for students wishing to improve their knowledge of the French language and culture by one year's intensive study.

1973

First degrees in Architecture awarded. St. Patrick's College moves to new facility on the Rideau River campus. Establishment of the School of Industrial Design. New Athletics complex, with a fifty-metre pool and a fitness centre opened.

1974

Faculty of Graduate Studies renamed Faculty of Graduate Studies and Research. School of International Affairs renamed The Norman Paterson School of International Affairs. First courses offered off-campus in Lanark County and downtown Ottawa. St. Patrick's College Division held first Convocation ceremony at new location on Rideau River campus. Master of Journalism program approved for September 1974. Master of Arts program in Anthropology approved for September 1975. Master of Arts program in Religion approved for September 1975. Program leading to Certificate in Teaching of English as a Second Language established.

1975

Lester B. Pearson Chair for International Affairs approved for January 1, 1976. Establishment of Gerhard Herzberg Lecture Series in Science. First students enrol in joint Master of Public Administration program, offered in conjunction with the University of Ottawa. Scholarships established for part-time students. CKCU-Radio Carleton has FM licence approved. New undergraduate programs introduced in Canadian Studies and Computing Science in December, 1975. A program in Film Studies was approved in November, 1975.

1976

Creation of the Paterson Centre in March, 1976. Division of the Faculty of Arts into Faculty of Arts and Faculty of Social Sciences effective July, 1976. First Master of Journalism degrees awarded November, 1976.

Enrolment

9,224 full-time students registered at the University in the fall of 1976; 8,796 in the main University and 428 at St. Patrick's College. There were 7,267 students taking courses on a part-time basis.

Presidents

1942-47

Henry Marshall Tory

1947-55

Murdoch Maxwell MacOdrum

1955-56

James Alexander Gibson (Acting)

1956-58

Claude Thomas Bissell

1958-72

Arnold Davidson Dunton

1972-

Michael Oliver

Chancellors

1952-54

Harry Stevenson Southam

1954-68

Chalmers Jack Mackenzie

1969-73

Lester Bowles Pearson

1973-

Gerhard Herzberg

University

Carleton University is located on a picturesque 152-acre site between the Rideau River and the Rideau Canal, a few miles south of the Parliament Buildings in Ottawa.

Begun in 1942 as a part-time college to serve the needs of a wartime population, Carleton now has an enrolment of over 16,000 full and part-time students and 608 full-time members of faculty.

The University offers undergraduate degrees in Arts, Science, Engineering, Architecture, Industrial Design, Commerce, Journalism and Music. Graduate degrees are awarded at the master's and doctoral levels in Arts, Science and Engineering. Undergraduate study is available in forty-four areas. Graduate work includes thirty master's and fourteen doctoral programs.

To meet the changing needs of society, Carleton is continuing to develop interdisciplinary programs of study within and across its five faculties: Arts, Social Sciences, Science, Engineering and Graduate Studies and Research. For example, programs have been developed in the areas of Canadian Studies, Film Studies, International Affairs, Public Administration, Soviet and East European Studies, Public Policy and Management, Computing Science and Integrated Science Studies.

Since its inception, Carleton has maintained a close liaison with Ottawa and the Ottawa Valley community, paying particular attention to the needs of mature matriculants, teachers, public servants and people interested in furthering their education on a full or part-time basis. Carleton has recently taken courses in to the community, offering courses in outlying areas such

as Smiths Falls, Carleton Place, Arnprior, and in various locations within metropolitan Ottawa.

Evening courses, extension courses, public lectures, films, speaking engagements, concerts, conferences, conventions and recreational activities bring the community and Carleton together on a year round basis.

The first three buildings on the Rideau river campus were opened in 1959. There are now 23 buildings on the Rideau River campus. By 1963 facilities had been expanded to include Southam Hall, the University Commons, the first two residences (Renfrew House and Lanark House), the University Gymnasium, and extensions to the Library and Paterson Hall. In 1964 the first two sections of the C.J. Mackenzie Building for Engineering were opened, with additional wings completed in 1966 and 1968. The E.W.R. Steacie Building for Chemistry was completed in 1965, along with two more residences (Grenville House and Russell House), and a Maintenance Building and Central Heating Plant (enlarged in 1969). The Physics Building was opened in 1966 and in 1972 was renamed the Herzberg Laboratories for Physics in honour of Gerhard Herzberg. In 1974 a telescope was built on top of these laboratories. The Loeb Building for Social Sciences was completed in 1967.

Controlled Environmental Laboratories for Biology, an addition to the Gymnasium, and the Administration Building were completed in 1969, and residential facilities expanded to include a new University Commons and Glengarry House, bringing the total residence places available to 1,371.

The University Centre was opened in 1970, providing facilities for all members of the University community, including recreational facilities, food services, a meeting-dining room, a coffee house, general and specialized lounges, multi-purpose hall, variety store, barber shop, the Faculty Club, and offices for the Counselling and Health Services and Students' Association. A new student pub was opened in 1974. Facilities in the University Centre are also available for use by interested groups in the Ottawa community. A Carleton Women's Centre was established in October, 1976.

The community switchboard was replaced by two services; an information desk and a box office. In 1975, Information Carleton was established by the Office of the Dean of Student Services and the Carleton University Students' Association in co-operation with the Information Office. Located in the University Centre, this centralized information service is also designed to promote student-staff contact and to foster a sense of community. The box office provides a ticket service for transportation and special events on and off-campus.

A 658-car parking garage was also completed in 1970. A 22-storey Arts building was opened in the Fall of 1971.

The School of Architecture building was completed and in use in the Fall of 1972. In the Fall of 1973 St. Patrick's College moved to the Rideau River campus.

The new Athletics complex opened in the Winter of 1974, and in March, 1976, the Paterson Centre was established.

Carleton's location in Canada's capital city brings many benefits to both its students and its professors. The mutually beneficial exchange of students, scholars and facilities between educational and government institutions helps to make Ottawa the open education centre it is.

St. Patrick's College

St. Patrick's College, situated on the Carleton campus, is a division of the Faculty of Arts and offers an alternative "small college" approach to undergraduate studies within the framework of the larger University environment. Integrated and multi-disciplinary programs add depth to the special goals of St. Patrick's College which brought with it 40 years of tradition as a liberal arts college when it integrated with Carleton University in 1967.

In 1973, the St. Patrick's College division moved from its location on Echo Drive to a new College facility on the Rideau River campus. In addition to classroom, seminar room, office and auditorium/theatre space the College building provides food services, recreational space, a fine arts room and a language lab. With its move, the College intensified its efforts to provide a different atmosphere and approach to undergraduate studies. New methods and new developments in teaching and learning continue to be the main emphasis.

In 1971 a Unified Liberal Arts Program was launched which emphasizes interdisciplinary study and offers an alternative to the conventional course-gear approach to education. The following year a one-year French Program was begun, offering students an opportunity to spend one year of intensive study in French. The College also has multidisciplinary offerings in Women's Studies. In 1974 a special Senate committee was set up to study the future role of the College, and in 1975 Senate approved the recommendations of the committee that two types of programs should be developed at the College: multidisciplinary programs which would be the principal responsibility of the College; and disciplinary programs leading to a departmental major which would be the principal responsibility of the department. The development of new multidisciplinary programs is now underway, and in December 1975, a new multidisciplinary program in Canadian Studies was approved.

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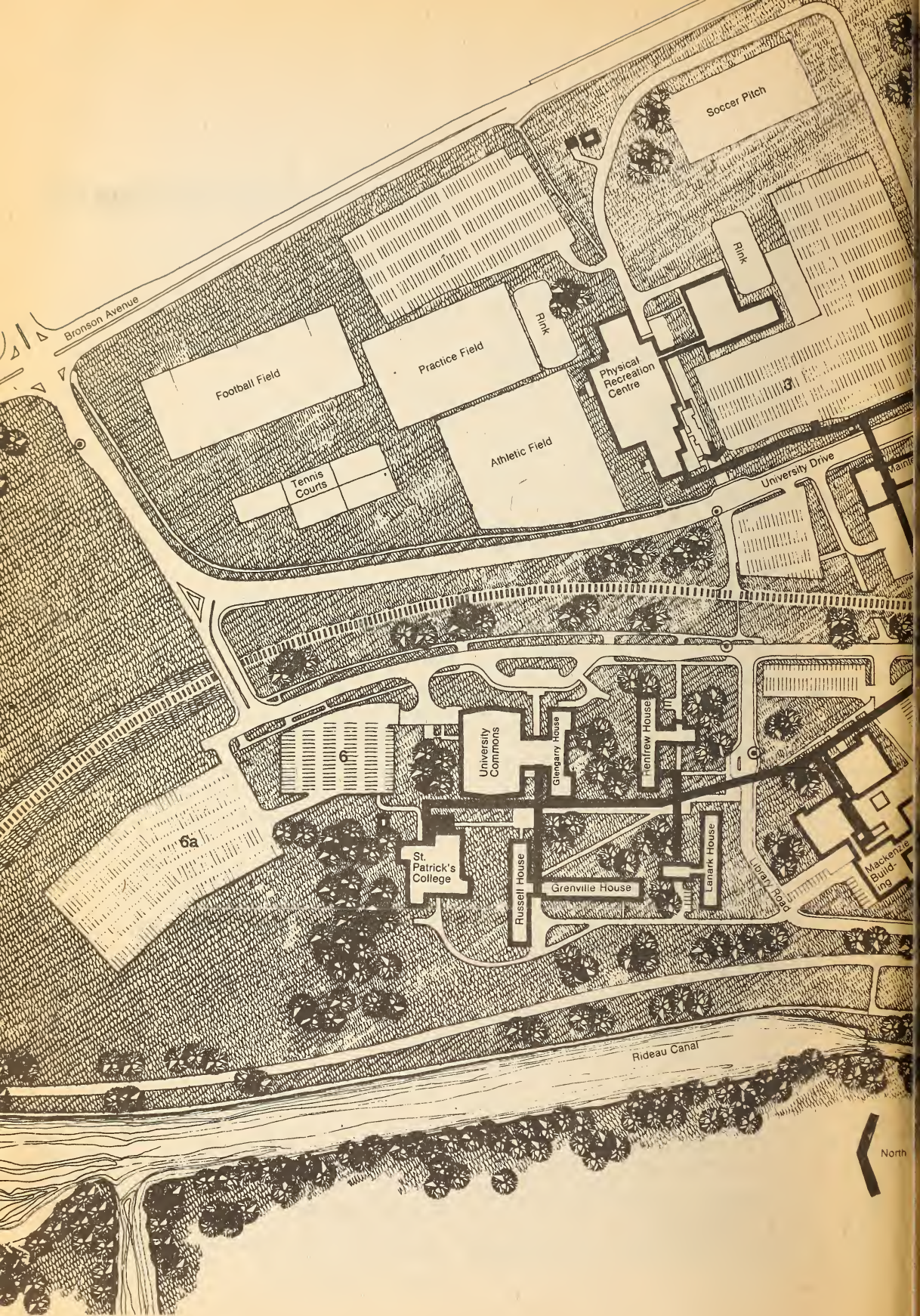
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
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